EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	alkylenedioxthiophene and (polyphosphoric or (thia near alkanedicarboxylic) or cyclohexadiene or polyhydroxy or tetronic or dihydroxybenzene or (thia near alkyl near benzimidazole))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:47
L2	0	dioxthiophene and (polyphosphoric or (thia near alkanedicarboxylic) or cyclohexadiene or polyhydroxy or tetronic or dihydroxybenzene or (thia near alkyl near benzimidazole))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:44
L3	52	dioxythiophene and (polyphosphoric or (thia near alkanedicarboxylic) or cyclohexadiene or polyhydroxy or tetronic or dihydroxybenzene or (thia near alkyl near benzimidazole))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:47
L4	7	L3 and louwet.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:45
L5	290	dioxythiophene and (polyphosphoric or (thia near alkanedicarboxylic) or cyclohexadiene or polyhydroxy or tetronic or dihydroxybenzene or (thia near alkyl near benzimidazole) or polyether)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:47
L6	0	alkylenedioxthiophene and (polyphosphoric or (thia near alkanedicarboxylic) or cyclohexadiene or polyhydroxy or tetronic or dihydroxybenzene or (thia near alkyl near benzimidazole) or polyether)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:47
L7	95	alkylenedioxythiophene and (polyphosphoric or (thia near alkanedicarboxylic) or cyclohexadiene or polyhydroxy or tetronic or dihydroxybenzene or (thia near alkyl near benzimidazole) or polyether)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:56
L8	9	alkylenedioxythiophene same (polyphosphoric or (thia near alkanedicarboxylic) or cyclohexadiene or polyhydroxy or tetronic or dihydroxybenzene or (thia near alkyl near benzimidazole) or polyether)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:51
L9	22	L7 and louwet.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:52

EAST Search History

L10	3	L7 and dyck.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:53
L11	4	L7 and loccufier.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:53
L12	16	L7 and groenendaal.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:54
L13	16	L7 and andriessen.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:54
L14	1	10/642933	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:54
L15	3	L7 and 313/504	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:56
L16	3	L7 and 313/506	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:56
L17	20	L7 and 428/690	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:56
L18	5	L7 and 428/917	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:56
L19	0	L7 and 257/99	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:56
L20	5	L7 and 257/40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/07/20 18:56

STIC Search Report
EIC 1700

USPTO

STIC Database Tracking Number: 196053

TO: Camie Thompson **Location:** **Art Unit : 1774** **July 20, 2006** **Case Serial Number: 10/642933**	**From: Usha Shrestha** **Location: EIC 1700** **REMSEN 4B28** **Phone: 571/272-3519** **usha.shrestha@uspto.gov**

Search Notes

Examiner Thompson,

As per your broadest search request for the Case Number 10/642,933 I did the structure search for Formula II or I and text search for the Thia-alkanedicarboxylic acid and combined with the dioxythiophene compound that gave me only 2 answers See L25. For other compounds search listed in Claim 1, I have already included in my previous search so is not included with this report. Again I did a very broad search as dioxythiophene as a component A with any other component B See L67. If you have any questions Please let me know. Thank you.

sira
Search and Information Resources Administration

Access DB# 196053

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Carrie Thompson Examiner # : 79244 Date: 7/19/06
Art Unit: 1774 Phone Number 30 571-272 7536 Serial Number: 10/642,933
Mail Box and Bldg/Room Location: 10D28 Results Format Preferred (circle): PAPER DISK E-MAIL
Renssen

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: layer Configuration of improved Stability

Inventors (please provide full names): Frank Louwet; Geert Dyck; Johan Loccufier; Bert Groenendaal; Hieryonymus Andriessen

Earliest Priority Filing Date: 8/23/02

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please refine this search. The search does not cover everything. The claims include much broader terms. Some compounds such as the dicarboxylic acids were left out.

Thanks so much!

Claim 1 is broad. Please search for ~~that~~ broadest interpretation.

I really appreciate it.

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 12:09:03 ON 20 JUL 2006

=> d his ful

     FILE 'REGISTRY' ENTERED AT 08:45:58 ON 20 JUL 2006
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L2           4928 SEA SSS FUL L1

     FILE 'HCAPLUS' ENTERED AT 08:46:22 ON 20 JUL 2006
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                SEL RN

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                  150504-14-6/BI OR 202927-42-2/BI OR 146796-02-3/BI OR
                  146796-14-7/BI OR 1633-83-6/BI OR 204444-01-9/BI OR
                  204444-03-1/BI OR 29797-09-9/BI OR 30619-16-0/BI OR
                  3132-64-7/BI OR 4971-56-6/BI OR 50851-57-5/BI OR
                  51-17-2/BI OR 540803-64-3/BI OR 58416-04-9/BI OR
                  667420-85-1/BI OR 7646-69-7/BI)
L5              1 SEA ABB=ON  4971-56-6/RN
L6              1 SEA ABB=ON  29797-09-9/RN
L7              STR
L8              3 SEA SSS SAM L7
L9              SCR 1838
L10            30 SEA SSS SAM L7 NOT L9
L11             SCR 1992
L12            33 SEA SSS SAM L7 NOT (L9 OR L11)
L13             SCR 1701
L14            17 SEA SSS SAM L7 AND L13 NOT (L9 OR L11)
L15           354 SEA SSS FUL L7 AND L13 NOT (L9 OR L11)
                SAV L15 THO933A/A
                E THIA METHANEDICARBOXYLIC ACID/CN
L16             0 SEA ABB=ON  THIA(A)DICARBOXYLIC ACID?/CNS
L17           577 SEA ABB=ON  THIA(5A)DICARBOXYLIC ACID?/CNS
L18          2889 SEA ABB=ON  L2 NOT 1-100/N
L19          2775 SEA ABB=ON  L18 NOT 1-100/M

     FILE 'HCAPLUS' ENTERED AT 09:24:28 ON 20 JUL 2006
L20          4718 SEA ABB=ON  L19
L21           749 SEA ABB=ON  L15
L22           428 SEA ABB=ON  L17 OR THIA(5A)DICARBOXYLIC(A)ACID? OR
                  THIA(A)(ALKANEDICARBOXYLIC? OR METHANEDICARBOXYLIC? OR
                  EHTANEDICARBOXYLIC? OR PROPANEDICARBOXYLIC? OR
                  BUTANEDICARBOXYLIC?)
L23           272 SEA ABB=ON  L5
L24           471 SEA ABB=ON  L6
L25             2 SEA ABB=ON  L20 AND (L21 OR L22)

     FILE 'REGISTRY' ENTERED AT 09:47:12 ON 20 JUL 2006
L26             1 SEA ABB=ON  51-17-2/RN
L27             1 SEA ABB=ON  PHOSPHORIC ACID/CN

     FILE 'HCAPLUS' ENTERED AT 09:47:53 ON 20 JUL 2006
L28          6304 SEA ABB=ON  L26
L29        883308 SEA ABB=ON  L27 OR ?PHOSPHORIC(A)ACID? OR ?PHOSPHATE?
L30            19 SEA ABB=ON  DIHYDROXYBENZENE?(3A)(SULPHUR? OR SULFUR?)
L31            19 SEA ABB=ON  ?DIHYDROXYBENZENE?(3A)(SULPHUR? OR
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                SULFUR?)
L32          27 SEA ABB=ON  POLYHYDOXY?
L33           0 SEA ABB=ON  L20 AND L32
L34           2 SEA ABB=ON  L20 AND L22
L35          60 SEA ABB=ON  L20 AND ?DICARBOXYLIC?(A)ACID?
L36           2 SEA ABB=ON  L35 AND LAYER?(2A)(STRUCTURE? OR CONFIGURAT
                ION?)
L37          11 SEA ABB=ON  L35 AND DEV/RL
L38           2 SEA ABB=ON  L25 OR L34 OR L36
L39          15 SEA ABB=ON  THIA(5A)BENZIMIDAZOL?
L40           1 SEA ABB=ON  L20 AND L39

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     FILE 'HCAPLUS' ENTERED AT 10:48:19 ON 20 JUL 2006
L42        2932 SEA ABB=ON  L41
L43         901 SEA ABB=ON  L20 AND L42
L44         706 SEA ABB=ON  L43 AND DEV/RL
L45          23 SEA ABB=ON  L44 AND LAYER?(2A)(STRUCTURE? OR CONFIGURAT
                ION?)
L46          22 SEA ABB=ON  L45 AND (ELECTROLUMIN? OR ELECTRO(A)LUMIN?
                OR LUMIN? OR LIGHT(A)EMIT? OR PHOTOELECTRIC? OR
                SOLAR(A)CELL? OR TRANSISTOR? OR ELECTRONIC(A)DEVIC?)
L47          10 SEA ABB=ON  L35 AND (ELECTROLUMIN? OR ELECTRO(A)LUMIN?
                OR LUMIN? OR LIGHT(A)EMIT? OR PHOTOELECTRIC? OR
                SOLAR(A)CELL? OR TRANSISTOR? OR ELECTRONIC(A)DEVIC?)
L48        2184 SEA ABB=ON  L20 AND (ELECTROLUMIN? OR ELECTRO(A)LUMIN?
                OR LUMIN? OR LIGHT(A)EMIT? OR PHOTOELECTRIC? OR
                SOLAR(A)CELL? OR TRANSISTOR? OR ELECTRONIC(A)DEVIC?)
L49        1381 SEA ABB=ON  L20(L)(ELECTROLUMIN? OR ELECTRO(A)LUMIN?
                OR LUMIN? OR LIGHT(A)EMIT? OR PHOTOELECTRIC? OR
                SOLAR(A)CELL? OR TRANSISTOR? OR ELECTRONIC(A)DEVIC?)
L50         508 SEA ABB=ON  L49 AND (1840-2002)/PRY,AY,PY
L51          12 SEA ABB=ON  L50 AND LAYER?(2A)(STRUCTURE? OR CONFIGURAT
                ION?)
L52          65 SEA ABB=ON  L50 AND POLYMER?/SC,SX
L53           2 SEA ABB=ON  L38 OR L40
L54          65 SEA ABB=ON  L52 NOT L53
L55         192 SEA ABB=ON  L20 AND (L23 OR L24 OR L28 OR L29)
L56         112 SEA ABB=ON  L55 AND DEV/RL
L57          51 SEA ABB=ON  L56 AND (1840-2002)/PRY,AY,PY
L58          21 SEA ABB=ON  L57 AND PLASTIC?/SC,SX
L59          47 SEA ABB=ON  L20 AND  LAYER?(A)(STRUCTURE? OR CONFIGURAT
                ION?)
L60          41 SEA ABB=ON  L59 AND DEV/RL
L61          19 SEA ABB=ON  L60 AND (1840-2002)/PRY,AY,PY
L62          18 SEA ABB=ON  L61 AND (ELECTROLUMIN? OR ELECTRO(A)LUMIN?
                OR LUMIN? OR LIGHT(A)EMIT? OR PHOTOELECTRIC? OR
                SOLAR(A)CELL? OR TRANSISTOR? OR ELECTRONIC(A)DEVIC?)
L63          37 SEA ABB=ON  L62 OR L58
L64          19 SEA ABB=ON  L57 AND (ELECTROLUMIN? OR ELECTRO(A)LUMIN?
                OR LUMIN? OR LIGHT(A)EMIT? OR PHOTOELECTRIC? OR
                SOLAR(A)CELL? OR TRANSISTOR? OR ELECTRONIC(A)DEVIC?)
L65          48 SEA ABB=ON  L63 OR L64
L66          63 SEA ABB=ON  L54 NOT L65
L67          58 SEA ABB=ON  L66 AND DEV/RL
L68           1 SEA ABB=ON  L20 AND L21
L69           2 SEA ABB=ON  L68 OR L53
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=> d que 169
L1                STR
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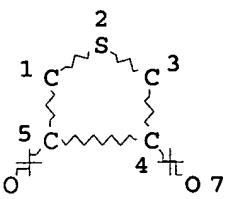


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NODE ATTRIBUTES:
NSPEC   IS RC     AT   6
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7

STEREO ATTRIBUTES: NONE
L2          4928 SEA FILE=REGISTRY SSS FUL L1
L7               STR

HO~Ak~S~Ak~S~Ak~OH
 1  2  3  4  5  6  7


NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7

STEREO ATTRIBUTES: NONE
L9               SCR 1838
L11              SCR 1992
L13              SCR 1701
L15          354 SEA FILE=REGISTRY SSS FUL L7 AND L13 NOT (L9 OR L11)
L17          577 SEA FILE=REGISTRY ABB=ON  THIA(5A)DICARBOXYLIC
                 ACID?/CNS
L18         2889 SEA FILE=REGISTRY ABB=ON  L2 NOT 1-100/N
L19         2775 SEA FILE=REGISTRY ABB=ON  L18 NOT 1-100/M
L20         4718 SEA FILE=HCAPLUS ABB=ON  L19
L21          749 SEA FILE=HCAPLUS ABB=ON  L15
L22          428 SEA FILE=HCAPLUS ABB=ON  L17 OR THIA(5A)DICARBOXYLIC(A)
                 ACID? OR THIA(A)(ALKANEDICARBOXYLIC? OR METHANEDICARBOX
                 YLIC? OR EHTANEDICARBOXYLIC? OR PROPANEDICARBOXYLIC?
                 OR BUTANEDICARBOXYLIC?)
L25            2 SEA FILE=HCAPLUS ABB=ON  L20 AND (L21 OR L22)
L34            2 SEA FILE=HCAPLUS ABB=ON  L20 AND L22
L35           60 SEA FILE=HCAPLUS ABB=ON  L20 AND ?DICARBOXYLIC?(A)ACID?

L36            2 SEA FILE=HCAPLUS ABB=ON  L35 AND LAYER?(2A)(STRUCTURE?
                 OR CONFIGURATION?)
L38            2 SEA FILE=HCAPLUS ABB=ON  L25 OR L34 OR L36
L39           15 SEA FILE=HCAPLUS ABB=ON  THIA(5A)BENZIMIDAZOL?
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L40             1 SEA FILE=HCAPLUS ABB=ON  L20 AND L39
L53             2 SEA FILE=HCAPLUS ABB=ON  L38 OR L40
L68             1 SEA FILE=HCAPLUS ABB=ON  L20 AND L21
L69             2 SEA FILE=HCAPLUS ABB=ON  L68 OR L53


=> d que l67
L1                STR
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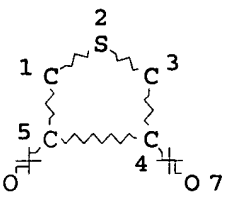


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NODE ATTRIBUTES:
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NSPEC   IS RC     AT   7
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7

STEREO ATTRIBUTES: NONE
L2           4928 SEA FILE=REGISTRY SSS FUL L1
L5              1 SEA FILE=REGISTRY ABB=ON  4971-56-6/RN
L6              1 SEA FILE=REGISTRY ABB=ON  29797-09-9/RN
L7                STR

HO~Ak~S~Ak~S~Ak~OH
 1   2   3   4   5   6   7

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7

STEREO ATTRIBUTES: NONE
L9                SCR 1838
L11               SCR 1992
L13               SCR 1701
L15           354 SEA FILE=REGISTRY SSS FUL L7 AND L13 NOT (L9 OR L11)
L17           577 SEA FILE=REGISTRY ABB=ON  THIA(5A)DICARBOXYLIC
                  ACID?/CNS
L18          2889 SEA FILE=REGISTRY ABB=ON  L2 NOT 1-100/N
L19          2775 SEA FILE=REGISTRY ABB=ON  L18 NOT 1-100/M
L20          4718 SEA FILE=HCAPLUS ABB=ON  L19
L21           749 SEA FILE=HCAPLUS ABB=ON  L15
L22           428 SEA FILE=HCAPLUS ABB=ON  L17 OR THIA(5A)DICARBOXYLIC(A)
                  ACID? OR THIA(A)(ALKANEDICARBOXYLIC? OR METHANEDICARBOX
                  YLIC? OR EHTANEDICARBOXYLIC? OR PROPANEDICARBOXYLIC?
                  OR BUTANEDICARBOXYLIC?)
L23           272 SEA FILE=HCAPLUS ABB=ON  L5
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L24          471 SEA FILE=HCAPLUS ABB=ON  L6
L25            2 SEA FILE=HCAPLUS ABB=ON  L20 AND (L21 OR L22)
L26            1 SEA FILE=REGISTRY ABB=ON  51-17-2/RN
L27            1 SEA FILE=REGISTRY ABB=ON  PHOSPHORIC ACID/CN
L28         6304 SEA FILE=HCAPLUS ABB=ON  L26
L29       883308 SEA FILE=HCAPLUS ABB=ON  L27 OR ?PHOSPHORIC(A)ACID? OR
                 ?PHOSPHATE?
L34            2 SEA FILE=HCAPLUS ABB=ON  L20 AND L22
L35           60 SEA FILE=HCAPLUS ABB=ON  L20 AND ?DICARBOXYLIC?(A)ACID?

L36            2 SEA FILE=HCAPLUS ABB=ON  L35 AND LAYER?(2A)(STRUCTURE?
                 OR CONFIGURATION?)
L38            2 SEA FILE=HCAPLUS ABB=ON  L25 OR L34 OR L36
L39           15 SEA FILE=HCAPLUS ABB=ON  THIA(5A)BENZIMIDAZOL?
L40            1 SEA FILE=HCAPLUS ABB=ON  L20 AND L39
L49         1381 SEA FILE=HCAPLUS ABB=ON  L20(L)(ELECTROLUMIN? OR
                 ELECTRO(A)LUMIN? OR LUMIN? OR LIGHT(A)EMIT? OR
                 PHOTOELECTRIC? OR SOLAR(A)CELL? OR TRANSISTOR? OR
                 ELECTRONIC(A)DEVIC?)
L50          508 SEA FILE=HCAPLUS ABB=ON  L49 AND (1840-2002)/PRY,AY,PY

L52           65 SEA FILE=HCAPLUS ABB=ON  L50 AND POLYMER?/SC,SX
L53            2 SEA FILE=HCAPLUS ABB=ON  L38 OR L40
L54           65 SEA FILE=HCAPLUS ABB=ON  L52 NOT L53
L55          192 SEA FILE=HCAPLUS ABB=ON  L20 AND (L23 OR L24 OR L28 OR
                 L29)
L56          112 SEA FILE=HCAPLUS ABB=ON  L55 AND DEV/RL
L57           51 SEA FILE=HCAPLUS ABB=ON  L56 AND (1840-2002)/PRY,AY,PY

L58           21 SEA FILE=HCAPLUS ABB=ON  L57 AND PLASTIC?/SC,SX
L59           47 SEA FILE=HCAPLUS ABB=ON  L20 AND  LAYER?(A)(STRUCTURE?
                 OR CONFIGURATION?)
L60           41 SEA FILE=HCAPLUS ABB=ON  L59 AND DEV/RL
L61           19 SEA FILE=HCAPLUS ABB=ON  L60 AND (1840-2002)/PRY,AY,PY

L62           18 SEA FILE=HCAPLUS ABB=ON  L61 AND (ELECTROLUMIN? OR
                 ELECTRO(A)LUMIN? OR LUMIN? OR LIGHT(A)EMIT? OR
                 PHOTOELECTRIC? OR SOLAR(A)CELL? OR TRANSISTOR? OR
                 ELECTRONIC(A)DEVIC?)
L63           37 SEA FILE=HCAPLUS ABB=ON  L62 OR L58
L64           19 SEA FILE=HCAPLUS ABB=ON  L57 AND (ELECTROLUMIN? OR
                 ELECTRO(A)LUMIN? OR LUMIN? OR LIGHT(A)EMIT? OR
                 PHOTOELECTRIC? OR SOLAR(A)CELL? OR TRANSISTOR? OR
                 ELECTRONIC(A)DEVIC?)
L65           48 SEA FILE=HCAPLUS ABB=ON  L63 OR L64
L66           63 SEA FILE=HCAPLUS ABB=ON  L54 NOT L65
L67           58 SEA FILE=HCAPLUS ABB=ON  L66 AND DEV/RL


=> fil hcap
FILE 'HCAPLUS' ENTERED AT 12:09:59 ON 20 JUL 2006

=> d l69 1-2 ibib abs hitstr hitind

L69  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2004:182945  HCAPLUS
DOCUMENT NUMBER:          140:244597
TITLE:                    Conducting film configuration with improved
                          stability to sunlight exposure
INVENTOR(S):              Louwet, Frank; Van Dyck, Geert; Loccufier,
```

Johan; Groenendaal, Bert; Andriessen, Hieronymus
PATENT ASSIGNEE(S): Agfa-Gevaert, Belg.
SOURCE: PCT Int. Appl., 50 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004018560	A1	20040304	WO 2003-EP50347	2003 0729
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003262551	A1	20040311	AU 2003-262551	2003 0729
EP 1551921	A1	20050713	EP 2003-792428	2003 0729
EP 1551921	B1	20060329		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006505099	T2	20060209	JP 2004-530268	2003 0729
PRIORITY APPLN. INFO.:			EP 2002-102217 A	2002 0823
			WO 2003-EP50347 W	2003 0729

AB Elec. conducting layers containing poly(3,4-dialkoxythiophene) and a polyanion are claimed which do not undergo a rapid increase in their surface resistance on exposure to sunlight. A **layer configuration** on a support, the **layer configuration** comprises a **layer** containing a polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units, in which the two alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, **thia-alkanedicarboxylic acids**, to

cyclohexadiene compds. and polyhydroxy-compds. selected from the group consisting of tetronic acid derivs.; ortho dihydroxybenzene compds. with at least one sulfo group, compds. according to (I): HO-CH2-CH(OH)-(CH2)m-S-CH2-C(R1)(R2)-CH2-S-(CH2)n-CH(OH)-CH2-OH, wherein R1 and R2 are independently H, -OH or alkyl, and n and m are independently 1, 2 or 3; compds. according to (II): HO-(CH2)p-S-CH2-S-(CH2)q-OH, wherein p and q are independently 2, 3 or 4; compds. hydrolyzable to tetronic acid derivs.; compds. hydrolyzable to compds. according to I; and sulfo-substituted 2-thia-alkylbenzimidazole compds.

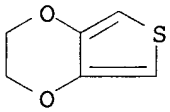
IT **126213-51-2**, PEDOT
(conducting film configuration with improved stability to sunlight exposure)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

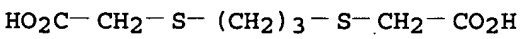
CRN 126213-50-1
CMF C6 H6 O2 S



IT **5065-18-9 44860-68-6 86249-75-4 172027-95-1**
(conducting film configuration with improved stability to sunlight exposure)

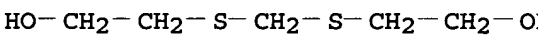
RN 5065-18-9 HCAPLUS

CN Acetic acid, 2,2'-[1,3-propanediylbis(thio)]bis- (9CI) (CA INDEX NAME)



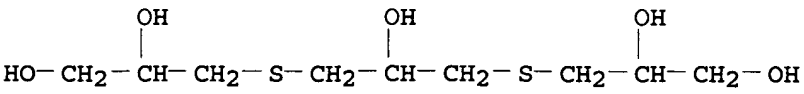
RN 44860-68-6 HCAPLUS

CN Ethanol, 2,2'-[methylenebis(thio)]bis- (9CI) (CA INDEX NAME)



RN 86249-75-4 HCAPLUS

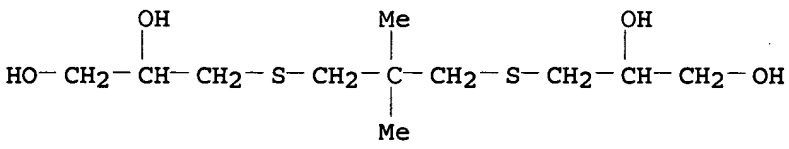
CN 1,2-Propanediol, 3,3'-[(2-hydroxy-1,3-propanediyl)bis(thio)]bis- (9CI) (CA INDEX NAME)



RN 172027-95-1 HCAPLUS

CN 1,2-Propanediol, 3,3'-[(2,2-dimethyl-1,3-propanediyl)bis(thio)]bis-

(9CI) (CA INDEX NAME)

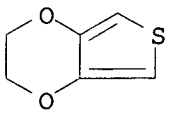


IT **126213-51-2D**, Poly(3,4-ethylenedioxythiophene), derivs.
126213-52-3, Poly(3,4-methylenedioxythiophene)
126213-52-3D, Poly(3,4-methylenedioxythiophene), derivs.
150504-14-6, Poly(3,4-propylenedioxythiophene)
150504-14-6D, Poly(3,4-propylenedioxythiophene), derivs.
202927-42-2, Poly(3,4-butylenedioxythiophene)
202927-42-2D, Poly(3,4-butylenedioxythiophene), derivs.
667430-64-0
(conducting film configuration with improved stability to sunlight exposure)

RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

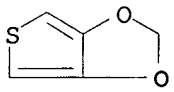
CRN 126213-50-1
CMF C6 H6 O2 S



RN 126213-52-3 HCAPLUS
CN Thieno[3,4-d]-1,3-dioxole, homopolymer (9CI) (CA INDEX NAME)

CM 1

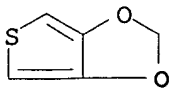
CRN 251-37-6
CMF C5 H4 O2 S



RN 126213-52-3 HCAPLUS
CN Thieno[3,4-d]-1,3-dioxole, homopolymer (9CI) (CA INDEX NAME)

CM 1

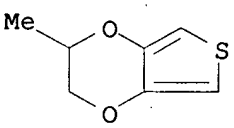
CRN 251-37-6
CMF C5 H4 O2 S



RN 150504-14-6 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

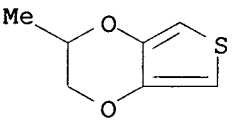
CRN 126235-11-8
CMF C7 H8 O2 S



RN 150504-14-6 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

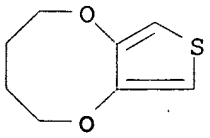
CRN 126235-11-8
CMF C7 H8 O2 S



RN 202927-42-2 HCAPLUS
CN Thieno[3,4-b][1,4]dioxocin, 2,3,4,5-tetrahydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

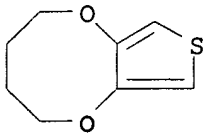
CRN 202927-41-1
CMF C8 H10 O2 S



RN 202927-42-2 HCAPLUS
CN Thieno[3,4-b][1,4]dioxocin, 2,3,4,5-tetrahydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

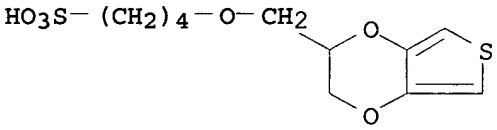
CRN 202927-41-1
CMF C8 H10 O2 S



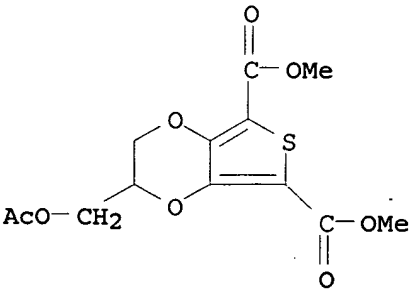
RN 667430-64-0 HCAPLUS
CN 1-Butanesulfonic acid, 4-[(2,3-dihydrothieno[3,4-b]-1,4-dioxin-2-yl)methoxy]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

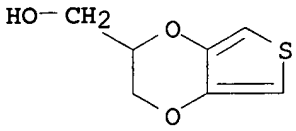
CRN 667430-63-9
CMF C11 H16 O6 S2



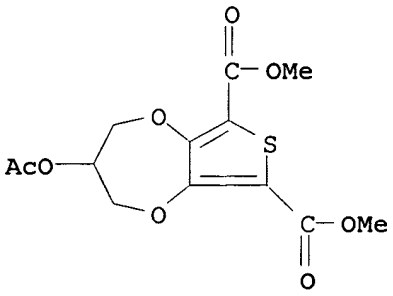
IT **540803-64-3P**
(preparation and reactions of)
RN 540803-64-3 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin-5,7-dicarboxylic acid, 2-[(acetyloxy)methyl]-2,3-dihydro-, dimethyl ester (9CI) (CA INDEX NAME)



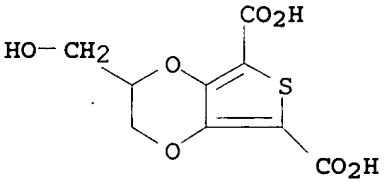
IT **146796-02-3P**
(preparation and reactions of)
RN 146796-02-3 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin-2-methanol, 2,3-dihydro- (9CI) (CA INDEX NAME)



IT **540803-65-4P**
(preparation of)
RN 540803-65-4 HCAPLUS
CN 2H-Thieno[3,4-b][1,4]dioxepin-6,8-dicarboxylic acid, 3-(acetyloxy)-, dimethyl ester (9CI) (CA INDEX NAME)



IT **146796-14-7P**
(preparation of)
RN 146796-14-7 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin-5,7-dicarboxylic acid, 2,3-dihydro-2-(hydroxymethyl)- (9CI) (CA INDEX NAME)



IC ICM C08L065-00
ICS C08G061-12; C08K005-49
CC 76-2 (Electric Phenomena)
IT 2530-83-8, 3-Glycidoxypropyltrimethoxysilane **126213-51-2**, PEDOT
(conducting film configuration with improved stability to sunlight exposure)
IT 50-81-7, L-Ascorbic acid, processes 111-17-1 111-46-6, Diethyleneglycol, processes 149-45-1 872-50-4, processes **5065-18-9** 7664-38-2, Phosphoric acid, processes 15042-01-0 25038-59-9, Polyethyleneterephthalate, processes **44860-68-6 86249-75-4** 88307-06-6 138578-42-4 **172027-95-1** 667430-62-8
(conducting film configuration with improved stability to sunlight exposure)
IT **126213-51-2D**, Poly(3,4-ethylenedioxythiophene), derivs.

126213-52-3, Poly(3,4-methylenedioxythiophene)
126213-52-3D, Poly(3,4-methylenedioxythiophene), derivs.
150504-14-6, Poly(3,4-propylenedioxythiophene)
150504-14-6D, Poly(3,4-propylenedioxythiophene), derivs.
202927-42-2, Poly(3,4-butylenedioxythiophene)
202927-42-2D, Poly(3,4-butylenedioxythiophene), derivs.
667430-64-0
(conducting film configuration with improved stability to sunlight exposure)

IT **540803-64-3P**
(preparation and reactions of)

IT **146796-02-3P** 204444-01-9P
(preparation and reactions of)

IT **540803-65-4P**
(preparation of)

IT **146796-14-7P**
(preparation of)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L69 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:182502 HCAPLUS
DOCUMENT NUMBER: 140:236721
TITLE: **Layer configuration** with improved stability to sunlight exposure
INVENTOR(S): Louwet, Frank; Dyck, Geert Van; Loccufier, Johan; Groenendaal, Bert; Andriessen, Hieronymus
PATENT ASSIGNEE(S): Agfa-Gevaert, Belg.
SOURCE: U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004043895	A1	20040304	US 2003-642933	2003 0818
PRIORITY APPLN. INFO.:			EP 2002-102217 A	2002 0823
			US 2002-409794P P	2002 0911

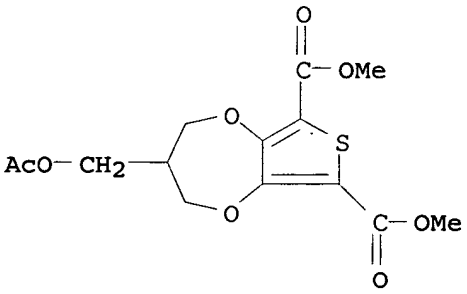
OTHER SOURCE(S): MARPAT 140:236721
AB **Layered structures** comprising a **layer** containing a polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units, in which the alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, **thia-alkanedicarboxylic acids**, cyclohexadiene compds.

and polyhydroxy-compds. selected from the group consisting of tetronic acid derivs., ortho-dihydroxybenzene compds. with ≥1 sulfo group, compds. described by the general formula HO-CH2-CH(OH)-(CH2)m-S-CH2-C(R1)(R2)-CH2-S-(CH2)n-CH(OH)-CH2-OH (I: R1 and R2 = independently selected H, -OH, or alkyl; n = 1, 2, or 3; and m = 1, 2 or 3); compds. described by the general formula HO-(CH2)p-S-CH2-S-(CH2)q-OH (p = 2,3, or 4; q = 2, 3 or 4), compds. hydrolyzable to tetronic acid derivs., compds. hydrolyzable to compds. described by the general formula I; and sulfo-substituted 2-**thia**-alkyl-**benzimidazole** compds. The layers are capable of reducing hole-electron recombination at the pos. electrode thereby increasing the efficiency and lifetime of electronic devices containing such **layered structures.** Electroluminescent devices, especially light-emitting diodes, transistors, and photovoltaic devices (e.g., solar cells) including the structures are also described.

IT **667420-85-1P**
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)

RN 667420-85-1 HCAPLUS

CN 2H-Thieno[3,4-b][1,4]dioxepin-6,8-dicarboxylic acid, 3-[(acetyloxy)methyl]-3,4-dihydro-, dimethyl ester (9CI) (CA INDEX NAME)



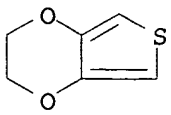
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
126213-51-2D, Poly(3,4-ethylenedioxythiophene), derivs.
126213-52-3, Poly(3,4-methylenedioxythiophene)
126213-52-3D, Poly(3,4-methylenedioxythiophene), derivs.
150504-14-6, Poly(3,4-propylenedioxythiophene)
150504-14-6D, Poly(3,4-propylenedioxythiophene), derivs.
202927-42-2, Poly(3,4-butylenedioxythiophene)
202927-42-2D, Poly(3,4-butylenedioxythiophene), derivs.
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

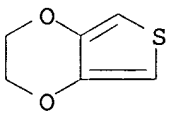
CRN 126213-50-1
CMF C6 H6 O2 S



RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

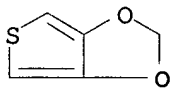
CRN 126213-50-1
CMF C6 H6 O2 S



RN 126213-52-3 HCAPLUS
CN Thieno[3,4-d]-1,3-dioxole, homopolymer (9CI) (CA INDEX NAME)

CM 1

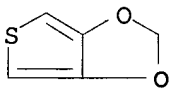
CRN 251-37-6
CMF C5 H4 O2 S



RN 126213-52-3 HCAPLUS
CN Thieno[3,4-d]-1,3-dioxole, homopolymer (9CI) (CA INDEX NAME)

CM 1

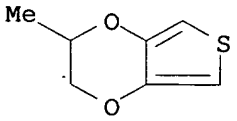
CRN 251-37-6
CMF C5 H4 O2 S



RN 150504-14-6 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

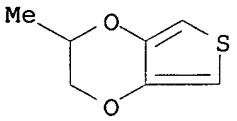
CRN 126235-11-8
CMF C7 H8 O2 S



RN 150504-14-6 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-2-methyl-, homopolymer (9CI)
(CA INDEX NAME)

CM 1

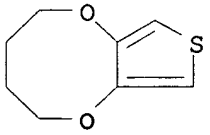
CRN 126235-11-8
CMF C7 H8 O2 S



RN 202927-42-2 HCAPLUS
CN Thieno[3,4-b][1,4]dioxocin, 2,3,4,5-tetrahydro-, homopolymer (9CI)
(CA INDEX NAME)

CM 1

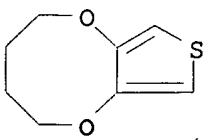
CRN 202927-41-1
CMF C8 H10 O2 S



RN 202927-42-2 HCAPLUS
CN Thieno[3,4-b][1,4]dioxocin, 2,3,4,5-tetrahydro-, homopolymer (9CI)
(CA INDEX NAME)

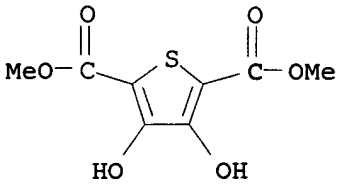
CM 1

CRN 202927-41-1
CMF C8 H10 O2 S

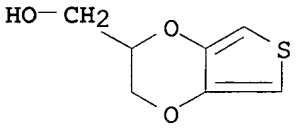


IT **58416-04-9**
(layered structures with improved stability
to sunlight exposure and electronic devices using them)

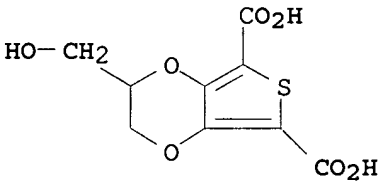
RN 58416-04-9 HCAPLUS
CN 2,5-Thiophenedicarboxylic acid, 3,4-dihydroxy-, dimethyl ester (6CI, 9CI) (CA INDEX NAME)



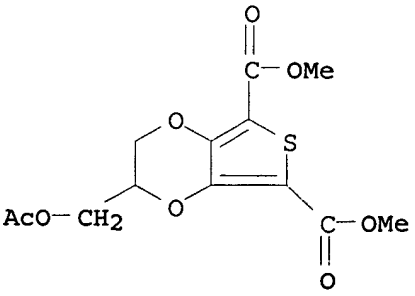
IT **146796-02-3P 146796-14-7P 540803-64-3P**
(layered structures with improved stability to sunlight exposure and electronic devices using them)
RN 146796-02-3 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin-2-methanol, 2,3-dihydro- (9CI) (CA INDEX NAME)



RN 146796-14-7 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin-5,7-dicarboxylic acid, 2,3-dihydro-2-(hydroxymethyl)- (9CI) (CA INDEX NAME)



RN 540803-64-3 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin-5,7-dicarboxylic acid, 2-[(acetyloxy)methyl]-2,3-dihydro-, dimethyl ester (9CI) (CA INDEX NAME)



IC ICM B01J031-00
INCL 502159000
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52, 73, 76
IT Carboxylic acids, uses
(dicarboxylic, thiaalkane; **layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT Electroluminescent devices
Photoelectric devices
Solar cells
Transistors
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT Polyphosphates
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT Polyphosphoric acids
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT Conducting polymers
(polythiophenes; **layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT **667420-85-1P**
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT 51-17-2D, Benzimidazole, thiaalkyl derivs. 4971-56-6D, Tetronic acid, derivs. 29797-09-9D, Cyclohexadiene, derivs.
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT 50851-57-5, Poly(styrene sulphonate)
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT 30619-16-0, Acrylamide-4-vinylpyridine copolymer
126213-51-2, Poly(3,4-ethylenedioxythiophene)
126213-51-2D, Poly(3,4-ethylenedioxythiophene), derivs.
126213-52-3, Poly(3,4-methylenedioxythiophene)
126213-52-3D, Poly(3,4-methylenedioxythiophene), derivs.
150504-14-6, Poly(3,4-propylenedioxythiophene)
150504-14-6D, Poly(3,4-propylenedioxythiophene), derivs.
202927-42-2, Poly(3,4-butylenedioxythiophene)
202927-42-2D, Poly(3,4-butylenedioxythiophene), derivs.
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT 204444-03-1P
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT 3132-64-7, Epibromohydrin **58416-04-9**
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)
IT 1633-83-6P, Butanesultone 7646-69-7P, Sodium hydride (NaH)
146796-02-3P 146796-14-7P 204444-01-9P
540803-64-3P
(**layered structures** with improved stability to sunlight exposure and electronic devices using them)

=> d l67 1-58 ibib abs hitstr hitind

L67 ANSWER 1 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:329251 HCAPLUS
DOCUMENT NUMBER: 143:237632
TITLE: Flexible organic light emitting devices using conductive polymeric anodes
AUTHOR(S): Kim, W. H.; Kafafi, Z. H.
CORPORATE SOURCE: Optical Sciences Division, U.S. Naval Research Laboratory, Washington, DC, 20375, USA
SOURCE: Digest of Technical Papers - Society for Information Display International Symposium (2002), 33, 1090-1091
CODEN: DTPSDS
PUBLISHER: Society for Information Display
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English

AB Organic light emitting devices (OLEDs) were fabricated on various flexible substrates using conducting polymers as anodes. The authors report on the performance of OLEDs using films of highly conductive Poly(3,4-ethylenedioxythiophene) poly(styrenesulfonate) (PEDOT:PSS) anodes without an indium tin oxide under-layer. The conducting polymer anodes are formed using a simple patterning method.

IT **155090-83-8**, Poly(3,4-ethylenedioxythiophene) poly(styrenesulfonate)
(flexible organic **light emitting** devices using conductive polymeric anodes)

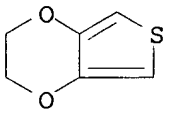
RN 155090-83-8 HCAPLUS
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



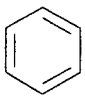
CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2

CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

D1— SO_3H

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**
IT **155090-83-8**, Poly(3,4-ethylenedioxythiophene) poly(styrenesulfonate)
(flexible organic **light emitting** devices using conductive polymeric anodes)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

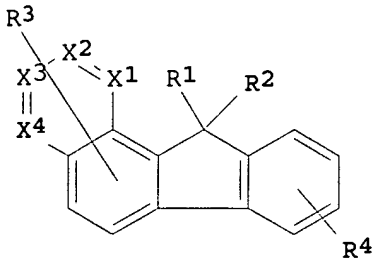
L67 ANSWER 2 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:550599 HCAPLUS
DOCUMENT NUMBER: 141:113841
TITLE: Complex fluorene-containing electroluminescent compounds and electroluminescent devices employing compounds
INVENTOR(S): Zheng, Shiying; Vaeth, Kathleen M.; Bennett, Grace A.
PATENT ASSIGNEE(S): Eastman Kodak Company, USA
SOURCE: U.S. Pat. Appl. Publ., 66 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004131880	A1	20040708	US 2002-334359	2002 1231 <--
US 6849348	B2	20050201		
WO 2004061048	A1	20040722	WO 2003-US40731	2003 1219 <--
W: CN, JP, KR				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
CN 1756825	A	20060405	CN 2003-80110052	

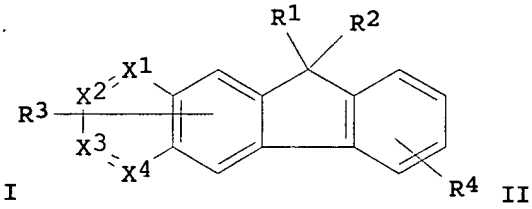
				2003 1219 <--
JP 2006512395	T2	20060413	JP 2004-565609	2003 1219 <--
US 2004241496	A1	20041202	US 2004-875011	2004 0623 <--
PRIORITY APPLN. INFO.:			US 2002-334359	A 2002 1231 <--
			US 2002-334441	A2 2002 1231 <--
			WO 2003-US40731	W 2003 1219

OTHER SOURCE(S): MARPAT 141:113841

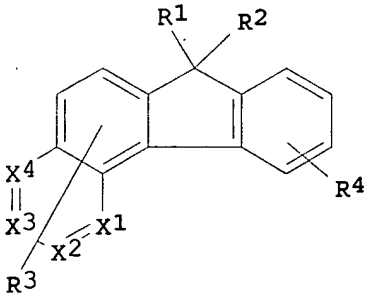
GI



I



II



III

AB Electroluminescent organic compound comprising a complex fluorene structure represented by one of formulas (I), (II) and (III) where X1-4 are individually the same or different and include a moiety containing CH or N; R1-4 are substituents each being individually hydrogen, or alkyl, or alkenyl, or alkynyl, or alkoxy of from 1 to 40 carbon atoms; aryl or substituted aryl of from 6 to 60 carbon atoms; or heteroaryl or substituted heteroaryl of from 4 to 60 carbons; or F, Cl, or Br; or a cyano group; or a nitro group; or R3, or R4 or both are groups that form fused aromatic or heteroarom.

rings. Electroluminescent devices employing the complex fluorene-containing compds. are also discussed.

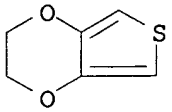
IT **126213-51-2**, PEDOT
(complex fluorene-containing **electroluminescent** compds. and **electroluminescent** devices employing compds.)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-12
ICS C09K011-06

INCL 428690000; X42-891.7; X31-350.4; X31-350.6; X25-7 4.0; X25-230.116; X25-230.135

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 25, **36**, 76

IT 13400-13-0, Cesium fluoride CsF 50926-11-9, Indium tin oxide 117665-21-1 **126213-51-2**, PEDOT
(complex fluorene-containing **electroluminescent** compds. and **electroluminescent** devices employing compds.)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 3 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:372800 HCAPLUS

DOCUMENT NUMBER: 140:382902

TITLE: Electrode fabrication methods for organic electroluminescent devices

INVENTOR(S): Theiss, Steven D.; Le, Ha T.; Tolbert, William A.; Wolk, Martin B.; Baude, Paul F.

PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA

SOURCE: U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004087165	A1	20040506	US 2002-285103	2002 1031
			<--	
US 6855636	B2	20050215		
WO 2004042838	A1	20040521	WO 2003-US28122	

2003
0908
<--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003272291	A1	20040607	AU 2003-272291	2003 0908 <--
EP 1556911	A1	20050727	EP 2003-754467	2003 0908 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN 1695258	A	20051109	CN 2003-824844	2003 0908 <--
JP 2006505111	T2	20060209	JP 2004-549943	2003 0908 <--

PRIORITY APPLN. INFO.:		US 2002-285103	A 2002 1031 <--
		WO 2003-US28122	W 2003 0908

AB The present invention provides a process for selectively thermally transferring insulators onto organic electroluminescent stacks or layers to electronically isolate adjacent devices upon deposition of electrode material. This can gave top electrodes for a plurality of organic electroluminescent devices on a substrate via one deposition step to form a single common top electrode or a plurality of electrodes patterned by shadowing due to the presence of the insulators.

IT **126213-51-2**, PEDOT
(electrode fabrication methods for organic **electroluminescent** devices)

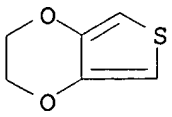
RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1

CMF C6 H6 O2 S



IC ICM H01L021-311
INCL 438694000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**
IT 7440-22-4, Silver, uses 7440-70-2, Calcium, uses 9003-53-6, Polystyrene 9011-11-4, Styrene-α-methylstyrene copolymer 50926-11-9, Indium tin oxide 65181-78-4, TPD **126213-51-2**, PEDOT
(electrode fabrication methods for organic **electroluminescent** devices)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 4 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:57598 HCAPLUS
DOCUMENT NUMBER: 140:101806
TITLE: Carbazole compounds, their polymers, and light-emitting elements using them with excellent blue light emission
INVENTOR(S): Watanabe, Saisuke; Okada, Hisashi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004018787	A2	20040122	JP 2002-179094 <--	20020619

PRIORITY APPLN. INFO.: JP 2002-179094 <-- 20020619

OTHER SOURCE(S): MARPAT 140:101806
AB The compds. are 3-R1-6-R2-9-R3-substituted carbazole [R1,2 = (un)substituted 9-carbazolyl; R3 = H2C:CRX; R = H, substituent; X = single bond, divalent organic group].
IT **155090-83-8**, Baytron P
(hole-transporting layer; carbazole compds. for host polymers for organic **electroluminescent** devices with good blue light emission)
RN 155090-83-8 HCAPLUS
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with

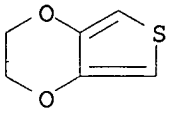
2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

IC ICM C08F026-12
ICS C07D209-80; C07D209-88; C09K011-06; H05B033-14; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **35**, 38
IT **155090-83-8**, Baytron P
(hole-transporting layer; carbazole compds. for host polymers for organic **electroluminescent** devices with good blue light emission)

L67 ANSWER 5 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:3521 HCAPLUS

DOCUMENT NUMBER: 140:67414
TITLE: Organic electroluminescent devices with light-emitting layer made of mixture of an optically active low molecular electric charge transport material and a high molecular light-emitting substance
INVENTOR(S): Chin, Byung Doo; Suh, Min Chul; Kim, Mu Hyun; Lee, Seong Taek; Kwon, Jang Hyuk
PATENT ASSIGNEE(S): Samsung Sdi Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004001972	A1	20040101	US 2003-421754 <--	20030424
US 7052784	B2	20060530		
KR 2004001381	A	20040107	KR 2002-36558 <--	20020628
JP 2004039630	A2	20040205	JP 2003-177031 <--	20030620
CN 1469692	A	20040121	CN 2003-148788 <--	20030626
US 2005095459	A1	20050505	US 2004-11583 <--	20041215
US 2005142380	A1	20050630	US 2004-11582 <--	20041215

PRIORITY APPLN. INFO.:		
KR 2002-36558 A		20020628
US 2003-421754 A1		20030424

AB Organic EL devices are described which comprise a first electrode; a hole transport layer; a light-emitting layer; and a second electrode; where the light-emitting layer uses a mixture of an optically active low mol. elec. charge transport material and a high mol. light-emitting substance. Donor films used as a light emitting substance are also discussed which comprise a high mol. light-emitting material; and a low mol. light-emitting material, where the high mol. light-emitting material is used together with

the low mol. light-emitting material having a relatively low adhesive force between the films, and a high mol. matrix preventing phase separation between the high mol. material and the low mol. material to enable laser induced thermal imaging.

IT **155090-83-8**, PEDOT-PSS
(hole-injecting layer; organic **electroluminescent** devices with **light-emitting** layer made of mixture of optically active low mol. elec. charge transport material and high mol. **light-emitting** substance)

RN 155090-83-8 HCAPLUS

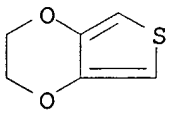
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

IC ICM H05B033-14
ICS B32B009-00
INCL 428690000; 428917000; 313504000; 313506000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, **36**, 38, 76
IT **155090-83-8**, PEDOT-PSS
(hole-injecting layer; organic **electroluminescent** devices with **light-emitting** layer made of mixture of optically active low mol. elec. charge transport material and high mol. **light-emitting** substance)
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 6 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:951086 HCAPLUS
DOCUMENT NUMBER: 140:21084
TITLE: Polymer and polymeric luminescent element comprising the same
INVENTOR(S): Noguchi, Takanobu; Tsubata, Yoshiaki; Sekine, Chizu
PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan
SOURCE: PCT Int. Appl., 69 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003099901	A1	20031204	WO 2003-JP6578	2003 0527
			<--	
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2004051962	A2	20040219	JP 2003-147389	2003 0526
			<--	
AU 2003241788	A1	20031212	AU 2003-241788	2003 0527
			<--	

PRIORITY APPLN. INFO.: JP 2002-153565 A 2002

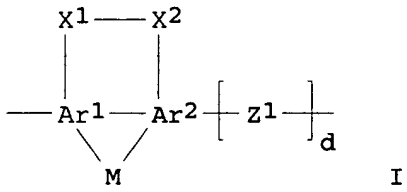
0528

<--

WO 2003-JP6578 W

2003
0527

GI



I

AB The present invention relates to a polymer with no.average mol. weight 103-108 comprising repeating units I, wherein Ar1, Ar2 = aromatic hydrocarbon group or heterocyclic group, one of X1 and X2 = C(:O) or C(R1)(R2) and the other = O, S, C(:O); M = OC(:O), C(:O)O, O, S, or C(:O); Z1 = CR:CR or C.tplbond.C; and d = 0 or 1. Thus, 25 g ellagic acid and 221 g 1-bromo-3,7-dimethyloctane were reacted to give 2,7-dihydroxy-3,8-di(3,7-dimethyloctyloxy)-1-[1]benzopyrano[5,4,3-cde][1]benzopyran-5,10-dione, which was reacted with trifluoromethanesulfonic anhydride, and polymerized with 2,2'-(9,9-dioctyl-9H-fluorene-2,7-diyl)bis-(1,3,2-dioxaborolane) at 100° for 5 h to give a copolymer with Mn 2.0 + 104 and Mw 5.6 + 104, which was applied on a quartz plate, showing fluorescence intensity 6.7 atomic unit at 438 nm and electroluminescence when fabricated into an electroluminescent element.

IT **155090-83-8**, Baytron PH
(preparation of polymers for polymeric **luminescent** elements)

RN 155090-83-8 HCAPLUS

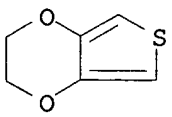
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1—CH═CH_2

D1—SO_3H

IC ICM C08G061-12
ICS C09K011-06; H05B033-14
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **35**, 38, 74, 75
IT **155090-83-8**, Baytron PH
(preparation of polymers for polymeric **luminescent** elements)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

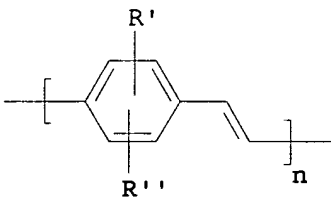
L67 ANSWER 7 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:355867 HCAPLUS
DOCUMENT NUMBER: 138:369395
TITLE: Synthesis of silylated poly(phenylenevinylene) for polymer light-emitting diodes
INVENTOR(S): Huang, Wei; Chen, Zhikuan; Chua, Soo Jin
PATENT ASSIGNEE(S): Agency For Science, Technology and Research, Peop. Rep. China; National University of Singapore
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003088043	A1	20030508	US 2002-174543	20020618
US 6885038	B2	20050426		
SG 118077	A1	20060127	SG 2001-3801	20010621

PRIORITY APPLN. INFO.: SG 2001-3801 A 20010621

GI



I

AB Disclosed are compds. according to formula (I), wherein R' and R'' are selected from the group consisting of R'= SiR1R2R3 and R''= H; R'= SiR1R2R3 and R''= SiR4R5R6; R'= Ar1SiR1R2R3 and R''= H; and R'= Ar1SiR1R2R3 and R''= Ar2SiR4R5R6; R1, R2, R3, R4, R5, and R6 are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, cycloalkyl, cycloalkenyl, cycloalkynyl, arylalkyl, arylalkenyl, and arylalkynyl; Ar1 and Ar2 are independently selected from the group consisting of arylene, arylenealkylene, arylenealkynylene, heteroarylene, heteroarylenealkylene, heteroarylenealkenylene and heteroarylenealkylene; and n is at least 20. Such compds. may be used as an emissive layer in a polymer light-emitting diode (PLED), which itself may be used in electroluminescent devices. Thus, poly(2,5-bistrimethylsilyl-1,4-phenylenevinylene) was prepared by polymerizing 2,5-bis(trimethylsilyl)-1,4-bis(bromomethyl)benzene in the presence of potassium tert-butoxide in anhydrous THF.

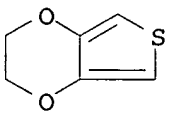
IT **126213-51-2**, Poly(3,4-ethylene-dioxy-thiophene) (hole injection/transporting layer; synthesis of silylated poly(phenylenevinylene) for polymer **light-emitting** diodes)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM C08G077-04
INCL 528025000
CC 35-5 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): 73
IT 91-19-0D, Quinoxaline, polymers 147-14-8, Copper phthalocyanin 288-88-0D, 1H-1,2,4-Triazole, polymers 288-99-3D, 1,3,4-Oxadiazole, polymers 2085-33-8, 8-Hydroxyquinoline aluminum **126213-51-2**, Poly(3,4-ethylene-dioxy-thiophene) (hole injection/transporting layer; synthesis of silylated poly(phenylenevinylene) for polymer **light-emitting** diodes)
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 8 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:355548 HCAPLUS
DOCUMENT NUMBER: 138:376061
TITLE: Light-emitting polymer composition comprising polymers having different interfacial characteristics to lower cohesion between elements and wavelength spectrums overlapping to allow energy transfer, and organic EL display devices using the polymer composition
INVENTOR(S): Kim, Mu-Hyun; Kwon, Jang-Hyuk; Suh, Min-Chul
PATENT ASSIGNEE(S): S. Korea
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003085653	A1	20030508	US 2002-172001 <--	20020617
KR 2003035021	A	20030509	KR 2001-66880 <--	20011029
CN 1417285	A	20030514	CN 2002-146961 <--	20021029
CN 1789369	A	20060621	CN 2005-10022929 <--	20021029
US 2005095460	A1	20050505	US 2004-11587	

					2004 1215 <--
US 2005095357	A1	20050505	US 2004-11588		2004 1215 <--
PRIORITY APPLN. INFO.:			KR 2001-66880	A	2001 1029 <--
			US 2002-172001	A1	2002 0617 <--
			CN 2002-146961	A3	2002 1029 <--

AB Light-emitting polymer composition for a light-emitting layer of an organic electroluminescent display, comprising light-emitting polymers which have different interfacial characteristics that lower a cohesion between elements of the light-emitting polymers, and corresponding wavelength spectrums that overlap to allow an energy transfer in the light-emitting polymer composition Organic electroluminescent displays are also described which comprising an anode; a hole-transporting layer formed on the anode; a light-emitting layer comprising the light-emitting polymer composition described above; and a cathode formed on the light-emitting layer. Light-emitting polymer compns. and electroluminescent displays are also discussed which may contain an additive which improves adhesion of the light-emitting composition to the substrate and lowers the cohesion between the elements of the light-emitting polymers, where the additive is one of an optically inert polymer, an optically inert low-mol. material, a polymer having a carrier transporting ability, and a low-mol. material having a carrier transporting ability.

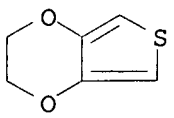
IT **126213-51-2**, PEDOT
(**light-emitting** polymer composition of polymers having different interfacial characteristics to lower cohesion between elements and wavelength spectrums overlapping to allow energy transfer, and organic EL display devices)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



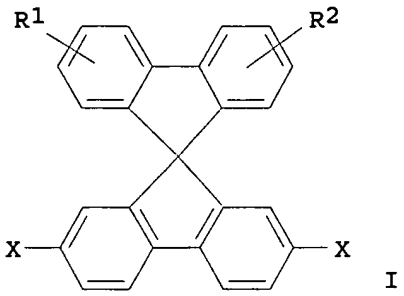
IC ICM H05B033-00
INCL 313506000

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38, 74, 76
IT 50851-57-5, Polystyrene sulphonate **126213-51-2**, PEDOT
(**light-emitting** polymer composition of polymers having different interfacial characteristics to lower cohesion between elements and wavelength spectrums overlapping to allow energy transfer, and organic EL display devices)

L67 ANSWER 9 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:174290 HCAPLUS
DOCUMENT NUMBER: 138:228954
TITLE: Spirobifluorene compounds, electroluminescent polymer obtained from the spirobifluorene compounds and electroluminescent element employing the polymer
INVENTOR(S): Lee, Jeong Ik; Lee, Hyoyoung; Oh, Jiyoung; Chu, Hye Yong; Do, Lee-mi; Kim, Seong Hyun; Zyung, Taehyoung
PATENT ASSIGNEE(S): Electronics and Telecommunications Research Institute, S. Korea
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003044641	A1	20030306	US 2001-7169 <--	2001 1130
US 6933063	B2	20050823		
KR 2003008993	A	20030129	KR 2001-44057 <--	2001 0721
PRIORITY APPLN. INFO.:			KR 2001-44057 A <--	2001 0721

OTHER SOURCE(S): MARPAT 138:228954
GI



I

AB Compound are described by the general formula I, where R1 and R2 are identical or different and are independently a straight-chain or branched alkyl group having 1-22 C atoms or an aryl group substituted by C1-C22 alkyl, and at ≥1 of the R1 and R2 contains ≥1 atoms selected from the group consisting of O, N, S, Si and Ge, and X is halogen, boric acid or boric ester. Electroluminescent polymers obtained from the spirobifluorene compds. with formula I and electroluminescent devices employing the polymers are also discussed.

IT **155090-83-8**, Baytron P 4083
(Baytron P 4083, buffer layer; spirobifluorene compds., **electroluminescent** polymer obtained from spirobifluorene compds. and **electroluminescent** element employing polymer and)

RN 155090-83-8 HCAPLUS

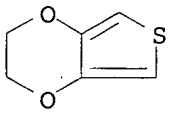
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

IC ICM H05B033-14
ICS C09K011-06
INCL 428690000; 428917000; 313504000; 252301160; 252301350; 526293000; 526296000
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, **36**, 76
IT **155090-83-8**, Baytron P 4083
(Baytron P 4083, buffer layer; spirobifluorene compds., **electroluminescent** polymer obtained from spirobifluorene compds. and **electroluminescent** element employing polymer and)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 10 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:915205 HCAPLUS
DOCUMENT NUMBER: 139:342888
TITLE: Bright electroluminescence from a conjugated dendrimer. [Erratum to document cited in CA138:80102]
AUTHOR(S): Ma, Dongge; Lo, Shih-Chun; Burn, P. L.; Lupton, J. M.; Samuel, I. D. W.
CORPORATE SOURCE: State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China
SOURCE: Applied Physics Letters (**2002**), 81(23), 4476
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The article was submitted by Dongge Ma without the knowledge and consent of the co-authors. Although it accurately describes the results of a new electroluminescent dendrimer when used in a graded device architecture, it omits to mention the much higher external efficiencies (in the range 8-16%) of dendrimer LEDs of conventional architecture that have been reported by J. P. J. Markham et al. (2002) and S.-C. Lo et al. (2002). The name of Shih-Chun Lo was misspelled and he should have been the second

author. Financial support was received from Opsys Ltd. and the Royal Society, but not from the Hundred Talents program of the Chinese Academy of Sciences.

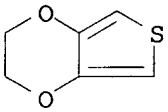
IT **126213-51-2**
(anode layer; bright **electroluminescence** from conjugated dendrimer and bilayer blurred interface **electroluminescent** device employing dendrimer (Erratum))

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76

IT 50926-11-9, Indium tin oxide **126213-51-2**
(anode layer; bright **electroluminescence** from conjugated dendrimer and bilayer blurred interface **electroluminescent** device employing dendrimer (Erratum))

L67 ANSWER 11 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:911173 HCAPLUS
DOCUMENT NUMBER: 138:177939

TITLE: Spectra adjustment and stability of electroluminescent devices based on random copolymers of fluorene and thiophene

AUTHOR(S): Niu, Yu-hua; Hou, Qiong; Yuan, Min; Huang, Jian; Cao, Yong

CORPORATE SOURCE: Institute of Polymer Photoelectronic Material and Device, South China University of Technology, Canton, 510640, Peop. Rep. China

SOURCE: Faguang Xuebao (**2002**), 23(5), 431-434
CODEN: FAXUEW; ISSN: 1000-7032

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Polymer film light emitting diodes based on dialkylfluorene-thiophene copolymers with different thiophene content were made. The device structure was ITO/PEDOT:PSS/dialkylfluorene-thiophene copolymer layer/Ba/Al. Typical turn on voltage was .apprx.5 V and the highest external quantum efficiency reached 1.8% and the highest current efficiency reached 12 cd/A. The electroluminescent spectra of the LED based on this series of copolyfluorenes could be adjusted effectively by changing the content of the thiophene comonomer. By comparing the spectral variation of the devices along with the increase of the c.d. or

after thermal annealing at different temps., the emission spectra were rather stable when the thiophene content reached 5-10%. For device based on the polydialkylfluorene-co-thiophene with 10% thiophene comonomer, no apparent spectral change was found even if the c.d. was ≤520 mA/cm2 or after the devices were annealed at 160° for 2 h on hot plate. Mechanism of the spectral adjustment with thiophene content was preliminarily discussed and it was believed that the energy level structures corresponding to the 2 kinds of conjugated chain segments were hybridized to a high extent. As to the excellent spectral stability of devices with current increasing or thermal annealing temperature, the origin was believed to be the introduction of low bandgap comonomer which had destructed the coplanar structure of polyfluorene main chain and thus increased the energy barrier to form excimer.

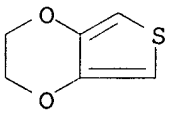
IT **126213-51-2**, PEDOT
(spectra adjustment and stability of **electroluminescent** devices containing random copolymers of dioctylfluorene and thiophene and sodium polystyrene sulfonate mixture with)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38, 76

IT **126213-51-2**, PEDOT
(spectra adjustment and stability of **electroluminescent** devices containing random copolymers of dioctylfluorene and thiophene and sodium polystyrene sulfonate mixture with)

L67 ANSWER 12 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:880792 HCAPLUS
DOCUMENT NUMBER: 138:195116
TITLE: Phosphorescent light-emitting electrochemical cell
AUTHOR(S): Chen, Fang-Chung; Yang, Yang; Pei, Qibing
CORPORATE SOURCE: Department of Materials Science and Engineering, University of California, Los Angeles, Los Angeles, CA, 90095, USA
SOURCE: Applied Physics Letters (**2002**), 81(22), 4278-4280
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Due to the harvest of singlet and triplet excitons, highly-efficient phosphorescent polymer light-emitting diodes have been demonstrated. However, the driving voltage of these devices

remains high because of the carrier trapping at the dopant sites. To achieve high power efficiency, a phosphorescent light-emitting electrochem. cell, which consists of bis[2-(2'-benzothienyl)-pyridinato-N,C3']iridium(acetylacetonate) as the dopant, poly[9,9-bis(3,6-dioxaheptyl)-fluorene-2,7-diyl] as the host polymer, and lithium trifluoromethane sulfonate has been demonstrated in this letter. The turn-on voltage for light emission was as low as the band gap of the host material (2.8 eV). Compared with the light-emitting diode with a similar device structure, a sixfold enhancement in power efficiency has been achieved.

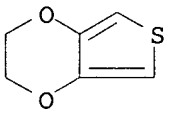
IT **126213-51-2**, PEDOT
(power efficiency of device with and without; phosphorescent **light-emitting** electrochem. cell based on dye-doped polymer)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 72, 76, 78

IT **126213-51-2**, PEDOT
(power efficiency of device with and without; phosphorescent **light-emitting** electrochem. cell based on dye-doped polymer)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 13 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:865197 HCAPLUS
DOCUMENT NUMBER: 138:195486
TITLE: Synthesis and characterization of novel conjugated light-emitting polymers
AUTHOR(S): Liu, Michelle S.; Jiang, Xuezhong; Herguth, Petra; Jen, Alex K.-Y.
CORPORATE SOURCE: Department of Materials Science and Engineering, University of Washington, Seattle, WA, 98195-2120, USA
SOURCE: Materials Research Society Symposium Proceedings (**2002**), 725(Organic and Polymeric Materials and Devices--Optical, Electrical and Optoelectronic Properties), 3-11
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Novel fluorene-based conjugated light-emitting polymers were designed and synthesized. By varying the compns. of the polymer backbone, the charge-injecting and -transporting properties of the polymers were significantly improved. The light-emitting diodes (LEDs) using these polymers as the emissive layers exhibited low turn-on voltage, a high external quantum efficiency, and high brightness due to balanced electron and hole conductivity

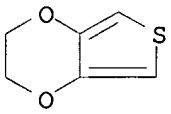
IT **126213-51-2**, Pedot
(synthesis and characterization of novel conjugated **light-emitting** polymers for LEDs)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **35**, **36**, 72, 76

IT **126213-51-2**, Pedot 269078-60-6
(synthesis and characterization of novel conjugated **light-emitting** polymers for LEDs)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 14 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:834815 HCAPLUS

DOCUMENT NUMBER: 138:97572

TITLE: Electroluminescence properties of an alternating blue-green light-emitting copolymer consisting of soft and rigid segments

AUTHOR(S): Wang, Hai-qiao; Li, Xiao-yu

CORPORATE SOURCE: The Key Lab. Sci. Technology Controllable Chem. Reactions, Ministry Education, Sch. Materials Sci. Eng., Beijing Univ. Chemical Technology, Beijing, 100029, Peop. Rep. China

SOURCE: Gongneng Gaofenzi Xuebao (**2002**), 15(3), 276-280
CODEN: GGXUEH; ISSN: 1004-9843

PUBLISHER: Gongneng Gaofenzi Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A blue-green light-emitting copolymer (TEO-NV) containing alternating 1,5-(3,5-dimethyloxy styrene) naphthalene as chromophore and tri(ethylene oxide) as functional spacer, was synthesized. Its chemical structure was characterized and luminescent properties was investigated. Thermal properties were measured with DSC and TGA

under nitrogen atmospheric TEO-NV has excellent thermal stability and the decomposition temperature is high up to 409 °C with Tg = 42 °C. TEO-NV can be soluble in many organic solvents, such as chloroform, methylene dichloride and toluene, and the polymer solution can be spin-coated onto various substrates giving highly transparent and homogeneous thin film. TEO-NV is a typical blue-green light-emitting copolymer with a maximum EL emitting peaks at 499 nm. A light-emitting diode (LED) based on TEO-NV was successfully fabricated. Its threshold voltage was ca. 5 V for light emission, and the maximum brightness was 295 cd/m2 at forward bias 20 V.

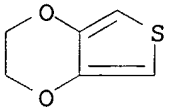
IT **126213-51-2**
(for **electroluminescent** devices made of alternating blue-green **light-emitting** copolymer consisting of soft and rigid segments)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 50851-57-5 50926-11-9, Indium tin oxide **126213-51-2**
(for **electroluminescent** devices made of alternating blue-green **light-emitting** copolymer consisting of soft and rigid segments)

L67 ANSWER 15 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:808551 HCAPLUS
DOCUMENT NUMBER: 138:30773
TITLE: Polybenzobisazoles Are Efficient Electron Transport Materials for Improving the Performance and Stability of Polymer Light-Emitting Diodes
AUTHOR(S): Alam, Maksudul M.; Jenekhe, Samson A.
CORPORATE SOURCE: Departments of Chemical Engineering and of Chemistry, University of Washington, Seattle, WA, 98195-1750, USA
SOURCE: Chemistry of Materials (**2002**), 14(11), 4775-4780
CODEN: CMATEX; ISSN: 0897-4756
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Seven polybenzobisazoles were studied as electron transport materials in arylene vinylene polymer-based electroluminescent devices. A large enhancement in performance and stability was

observed in poly(p-phenylene vinylene) and poly(2-methoxy-5(2'-ethyl-hexyloxy)-1,4-phenylene vinylene) light-emitting diodes by using polybenzobisthiazoles and poly(p-phenylene benzobisoxazole) as electron-transport materials. Devices using polybenzobisazole electron transport layers and Al cathodes had a turn-on voltage ≥2.8 V, a luminance of up to 1400 cd/m2, and an external quantum efficiency of up to 2.5%. These polymer devices and their performances were stable under repeated testing over a period of 9-10 mo storage in air. The superior performance of the polybenzobisazole thin films as electron-transport and hole-blocking materials in polymer light-emitting diodes is due to their high glass-transition temperature, environmental resistance, and photochem./electrochem. stability. Robust high-temperature polybenzobisazoles can be used as efficient electron-transport and hole-blocking materials for improving the performance and stability of polymer light-emitting devices.

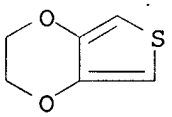
IT **126213-51-2**, PEDOT
(polybenzobisazoles are efficient electron transport materials for improving the performance and stability of polymer **light-emitting** diodes)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38

IT 60871-72-9 69794-31-6 96638-49-2, Polyphenylene vinylene **126213-51-2**, PEDOT 136733-40-9 138184-36-8, MEH-PPV 141727-99-3 143104-78-3 149273-94-9 161871-63-2
(polybenzobisazoles are efficient electron transport materials for improving the performance and stability of polymer **light-emitting** diodes)

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 16 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:796945 HCAPLUS
DOCUMENT NUMBER: 138:128647
TITLE: Fully transparent, organic light-emitting electrochemical cells
AUTHOR(S): Ouisse, T.; Armand, M.; Kervella, Y.; Stephan, O.
CORPORATE SOURCE: Laboratoire de Spectrometrie Physique, Universite Joseph Fourier Grenoble 1 and CNRS, Saint-Martin d'He` res, 38042, Fr.
SOURCE: Applied Physics Letters (**2002**),

81(17), 3131-3133
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors report the fabrication and performance of fully transparent, organic blue light-emitting electrochem. cells (OLECs), in which both the anode and cathode are made of In Sn oxide. The active layer is a blend of polyfluorene with long and flexible alkyl side chains grafted on the 9,9 position and of a molten salt. Two identical spin-coated active layers are laminated together at high temperature to form the OLECs. The electroluminescence threshold is .apprx.3.3 V and the light intensity exceeds 10 μW/cm2 at 5 V.

IT **155090-83-8**
(fully transparent, organic **light-emitting** electrochem. cells containing)

RN 155090-83-8 HCAPLUS

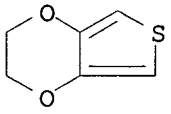
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**
IT 50926-11-9, ITO **155090-83-8** 268536-01-2, Tetrahexylammonium-bis(trifluoromethylsulfonyl)imide 268536-02-3
(fully transparent, organic **light-emitting** electrochem. cells containing)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 17 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:729717 HCAPLUS
DOCUMENT NUMBER: 138:63516
TITLE: Electroluminescence properties of an alternating copolymer consisting of conjugate and non-conjugate segments
AUTHOR(S): Zhang, Aiqing; Wang, Haiqiao; Li, Xiangdan
CORPORATE SOURCE: College of Chem. and Life Science, SCUFN, Wuhan, 430074, Peop. Rep. China
SOURCE: Zhongnan Minzu Daxue Xuebao, Ziran Kexueban (**2002**), 21(2), 1-3
CODEN: ZMDXA3
PUBLISHER: Zhongnan Minzu Daxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Single-layer electroluminescent device, using an alternating copolymer (TEO-DSB) as emitting layer, was fabricated and studied. TEO-DSB is a typical blue-light-emitting copolymer with 2 maximum EL emitting peaks lying at 465 and 489 nm, resp. An LED based on TEO-DSB was fabricated. The threshold voltage for both current and light emission was .apprx.5 V and the maximum brightness was 450 cd m-2 at forward bias 33 V.
IT **155090-83-8**
(**electroluminescence** and threshold voltage of alternating conjugate and non-conjugate segment copolymer **electroluminescent** device containing)
RN 155090-83-8 HCAPLUS
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

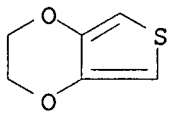
CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x

CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38, 76
IT **155090-83-8** 477843-27-9 477843-28-0
(**electroluminescence** and threshold voltage of alternating conjugate and non-conjugate segment copolymer **electroluminescent** device containing)

L67 ANSWER 18 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:719353 HCAPLUS
DOCUMENT NUMBER: 138:63506
TITLE: Efficient polarized light-emitting diodes utilizing ultrathin photoaddressable alignment layers
AUTHOR(S): Yang, X. H.; Neher, D.; Lucht, S.; Nothofer, H.; Guntner, R.; Scherf, U.; Hagen, R.; Kostromine, S.
CORPORATE SOURCE: Institute of Physics, University of Potsdam, Potsdam, 14469, Germany

SOURCE: Applied Physics Letters (**2002**), 81(13), 2319-2321
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We demonstrate that an ultrathin photoaddressable polymer (PAP) layer with a thickness as small as 5 nm can be utilized for the mono-domain alignment of thermotropic liquid crystalline polyfluorene. The optical anisotropies in absorption and emission are found to be independent of the PAP layer thickness within a range of 5 to 30 nm. On the other hand, decreasing the PAP layer thickness greatly improves the performance of polarized blue light-emitting diodes: With a PAP layer thickness of only 10 nm, the device turns on at 5 V and reaches a brightness of 100 cd/m2 at 8 V with an efficiency of 0.66 cd/A.

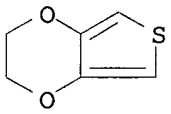
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(hole/exciton blocking layer containing; efficient polarized **light-emitting** diodes utilizing ultrathin photoaddressable alignment layers and)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 74

IT 50851-57-5, Polystyrenesulfonic acid **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(hole/exciton blocking layer containing; efficient polarized **light-emitting** diodes utilizing ultrathin photoaddressable alignment layers and)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 19 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:700507 HCAPLUS
DOCUMENT NUMBER: 138:80102
TITLE: Bright electroluminescence from a conjugated dendrimer
AUTHOR(S): Ma, Dongge; Lupton, J. M.; Samuel, I. D. W.; Lo, Shi-Chun; Burn, P. L.
CORPORATE SOURCE: Changchun Institute of Applied Chemistry, State Key Laboratory of Polymer Physics and Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China
SOURCE: Applied Physics Letters (**2002**),

81(12), 2285-2287
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Photoluminescence and electroluminescence (EL) from a conjugated dendrimer consisting of 3 distyrylbenzene units linked by a central N atom as core and meta-linked biphenyl units as dendrons were investigated. The conjugated dendrimer emits green light and shows photoluminescence quantum efficiency of 9%. Bright electroluminescence was realized by using bilayer devices with blurred interface, which were fabricated by sequentially spin coating a neat dendrimer and a dendrimer doped with 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (PBD). The devices have the following structure: ITO/3,4-polyethylenedioxythiothene-polystyrenesulfonate/dendrimer/dendrimer:PBD/Al. By optimizing the concentration of PBD, the maximum brightness and EL quantum efficiency reach 4100 cd/m2 and 0.17%, resp. This is the best result reported so far on organic light-emitting diodes using dendrimer as an active material with an Al cathode.

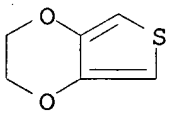
IT **126213-51-2**
(anode layer; bright **electroluminescence** from conjugated dendrimer and bilayer blurred interface **electroluminescent** device employing dendrimer)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76

IT 50926-11-9, Indium tin oxide **126213-51-2**
(anode layer; bright **electroluminescence** from conjugated dendrimer and bilayer blurred interface **electroluminescent** device employing dendrimer)

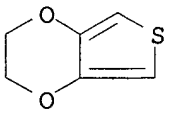
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 20 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:649141 HCAPLUS
DOCUMENT NUMBER: 137:279555
TITLE: A luminescent copolymer containing PPV-based chromophores and flexible tri(ethylene oxide) spacers
AUTHOR(S): Wang, Haiqiao; Sun, Qingjiang; Li, Yongfang; Liu, Deshan; Wang, Xiaogong; Li, Xiaoyu
CORPORATE SOURCE: The Key Laboratory of Science and Technology

of Controllable Chemical Reactions, School of Materials Science and Engineering, Ministry of Education, Beijing University of Chemical Technology, Beijing, 100029, Peop. Rep. China
SOURCE: Reactive & Functional Polymers (**2002**), 52(2), 61-69
CODEN: RFPOF6; ISSN: 1381-5148
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A luminescent triethylene oxide-phenylene vinylene block copolymer (TEO-MPV) was synthesized through Wittig polycondensation reaction. The structure of the copolymer was verified using FTIR, 1H NMR, and elemental anal. The electrochem. properties of the copolymer were evaluated and the HOMO and LUMO energy levels of the copolymer were estimated by cyclic voltammetry. Thermal anal. showed that the glass transition temperature (Tg) of the copolymer is about 85.6° and the decomposition temperature is over 384°. The fluorescence quantum yield of TEO-MPV chloroform solution reaches 99.05%, much higher than that of analogous polymers and has greenish-blue emission. An ITO/TEO-MPV/Al single layer LED assembly , ITO/PEDOT-PSS/TEO-MPV/Ca (Al) bilayer LED, and a light-emitting electrochem. cell (LEC) were fabricated. The LEC devices have lower turn-on and operating voltage than corresponding LED devices.
IT **126213-51-2**, PEDOT
(carrier layer; Wittig polycondensation in preparation of **luminescent** poly(phenylene vinylene-ethylene oxide) and electrochem. and **luminescence** and performance as emitter layer in devices)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 35-5 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): **36**, 73
IT **126213-51-2**, PEDOT
(carrier layer; Wittig polycondensation in preparation of **luminescent** poly(phenylene vinylene-ethylene oxide) and electrochem. and **luminescence** and performance as emitter layer in devices)
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 21 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:640559 HCAPLUS
DOCUMENT NUMBER: 137:353440

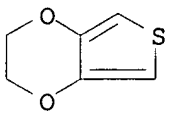
TITLE: Chemically tuning the optoelectronic properties of terphenylene-containing block copolymers
AUTHOR(S): Zheng, Min; Ding, Liming; Karasz, Frank E.
CORPORATE SOURCE: Department of Polymer Science & Engineering, University of Massachusetts, Amherst, MA, 01003, USA
SOURCE: Macromolecular Chemistry and Physics (**2002**), 203(10/11), 1337-1345
CODEN: MCHPES; ISSN: 1022-1352
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A series of partially conjugated polymers containing terphenylene linked by vinylene units were synthesized by Wittig condensation polymerization of the appropriate diphosphonium salts and the dialdehyde monomer. The m-Phenylene, p-phenylene, 1,3,4-oxadiazole-2,5-diyl-1,4-phenylene, 2,5-dimethoxy-1,4-phenylene and 9,10-anthrylene units were incorporated into the vinylene blocks to control the band gap. The effect of mol. architecture on optoelectronic and thermal properties of the polymers was studied. The optical emission of the copolymers can be tuned by changing the nature of the vinylene blocks to show violet, blue, green and green-yellow. Double-layer LEDs with ITO/PEDOT/polymer/Ca/Al layers were fabricated and, in parallel with the photoluminescence results, the change of emission color was also observed in the electroluminescence spectra.

IT **126213-51-2**, PEDOT
(preparation of monomers and Wittig polymerization in preparation of terphenylene-vinylene copolymers and **luminescence** and photochromism and **luminance** of LEDs)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



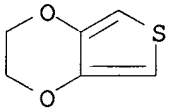
CC 35-5 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): **36**, 73, 76
IT **126213-51-2**, PEDOT
(preparation of monomers and Wittig polymerization in preparation of terphenylene-vinylene copolymers and **luminescence** and photochromism and **luminance** of LEDs)
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 22 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:633282 HCAPLUS
DOCUMENT NUMBER: 137:325879

TITLE: Electroluminescent properties of a triphenylamine-containing poly(phenylenevinylene)
AUTHOR(S): Pu, Yong-Jin; Soma, Minoru; Kido, Junji; Nishide, Hiroyuki
CORPORATE SOURCE: Department of Applied Chemistry, Waseda University, Tokyo, 169-8555, Japan
SOURCE: Journal of Photopolymer Science and Technology (2002), 15(2), 259-260
CODEN: JSTEEW; ISSN: 0914-9244
PUBLISHER: Technical Association of Photopolymers, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Poly(4-methyltriphenylamine-alt-1,4-phenylenevinylene) (MPA-pPV) was synthesized by the modified Wittig-Horner condensation polymerization The effects of the polymer structure on the luminescence and on performance of LEDs were studied. The LEDs were assembled using MPA-pPV as hole transport layer, rubrene as fluorescent mol. dopant, bathocuproine as electron-blocking layer, tris(8-quinolinolato) aluminum (Alq3) as electron-transport layer, and poly(ethylene-dioxythiophene) : polystyrenesulfonic acid (PEDOT:PSS) as buffer layer between ITO contacts and MPA-pPV. Luminance-c.d. characteristics of various LED configurations were obtained. The single-layer (A) LED voltage was 3 V and maximum luminance was 640 cd/m2 at 10 V. The rubrene-doped single-layer LED showed a higher efficiency than that of A. The LED with PEDOT:PSS as hole-injection layer between ITO and MPA-pPV did not exhibit a significant improvement in efficiency. The MPA-pPV has good hole injection ability and high hole mobility, suitable as emission layer and as host to fluorescent mols.
IT **126213-51-2**, Poly(ethylene-dioxythiophene)
(buffer layer component; **luminescence** response and performance of prepared phenylamine-poly(phenylenevinylene) as emitter layer and fluorescent mol. host in LEDs)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 36-5 (Physical Properties of Synthetic High **Polymers**)
Section cross-reference(s): **35**, 73
IT 50851-57-5, Polystyrenesulfonic acid **126213-51-2**, Poly(ethylene-dioxythiophene)
(buffer layer component; **luminescence** response and performance of prepared phenylamine-poly(phenylenevinylene) as emitter layer and fluorescent mol. host in LEDs)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

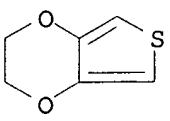
L67 ANSWER 23 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:633280 HCAPLUS
DOCUMENT NUMBER: 137:325878
TITLE: Multi-layer polymer light-emitting diodes with 2,3-dialkoxy-p-phenylene vinylene and its blends
AUTHOR(S): Sano, Takeshi; Tuan, Chi-Shen; Martin, Rainer E.; Holmes, Andrew B.
CORPORATE SOURCE: Materials and Devices Development Center, SANYO Electric Co., Ltd., Osaka, 573-8534, Japan
SOURCE: Journal of Photopolymer Science and Technology (**2002**), 15(2), 253-258
CODEN: JSTEEW; ISSN: 0914-9244
PUBLISHER: Technical Association of Photopolymers, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A green-fluorescent polymer, poly(2,3-dibutoxy-1,4-phenylene vinylene) (DB-PPV) was synthesized via dehydro-halogenation polymerization of 2,3-dibutoxy-1,4-bis(bromomethyl)benzene using K tert-butoxide initiator in dry THF, to obtain DB-PPV as yellow fibers. The photoluminescence (PL) peak wavelength of DB-PPV in solution is 492 nm and the PL quantum yield in chloroform is 72%; the PL peak wavelength of spin-coated films is 522 nm and PL quantum yield is 22%. Electroluminescent PLED devices were assembled using various layers of DB-PPV; poly(3,4-ethylenedioxithiophene): poly(styrenesulfonic acid) (PEDOT:PSS) as buffer layer and hole transport layer; and 1,3-bis[5-(p-t-butyl-phenyl)-1,3,,4-oxadiazol-2-yl]benzene (OXD-7) and tris(8-hydroxy quinolinato)aluminum (Alq3) as electron transport-layer. The EL efficiency of ITO/DB-PPV/Ca/Al devices improved when an electron transport-layer was incorporated into the structure. A blend of DB-PPV and poly(9,9-dioctylfluorene) (PF8) was also used in PLED structures; the EL peak wavelength was blue-shifted to 503 nm and the EL efficiency improved.

IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene) (buffer and hole transport-layer; **electroluminescence** efficiency of multi-layer PLEDS with prepared poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 36-5 (Physical Properties of Synthetic High **Polymers**)
Section cross-reference(s): **35**, 73
IT 50851-57-5, Poly(styrenesulfonic acid) **126213-51-2**,

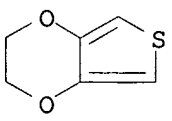
Poly(3,4-ethylenedioxythiophene)
(buffer and hole transport-layer; **electroluminescence** efficiency of multi-layer PLEDS with prepared poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 24 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:626934 HCAPLUS
DOCUMENT NUMBER: 138:17770
TITLE: Synthesis and electroluminescent properties of new poly(p-phenylenevinylene) derivative containing (2,2-diphenyl-vinyl)phenyl group
AUTHOR(S): Kwon, Soon-Ki; Shin, Dong-Cheol; Kim, Yun-Hi; Kim, Jong-wook; Joo, Dong-jin; You, Hong; Choi, Don-Soo
CORPORATE SOURCE: Department of Polymer Science & Engineering and Research Institute of Industrial Technology, Gyeongsang National University, Jinju, 660701, S. Korea
SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (**2002**), 43(2), 603-604
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB Authors synthesized poly(2-(2'-ethylhexyloxy)-5-(4''-(2''',2'''-diphenylvinyl)phenyl)-1,4-phenylenevinylene) and examined its optical properties. The obtained polymer was soluble in organic solvents and showed good film quality and thermal stability. The visible spectra and electroluminescence and luminescence data are reported. Also the LED with the synthesized polymer was fabricated.
IT **126213-51-2**, PEDOT
(synthesis and **electroluminescent** properties and applications of new poly(p-phenylenevinylene) derivative containing (2,2-di-Ph-vinyl)phenyl group)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



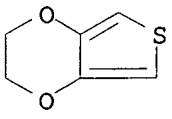
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **35**, **36**

IT **126213-51-2**, PEDOT
(synthesis and **electroluminescent** properties and applications of new poly(p-phenylenevinylene) derivative containing (2,2-di-Ph-vinyl)phenyl group)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 25 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:593233 HCAPLUS
DOCUMENT NUMBER: 137:286083
TITLE: Effects of buffer layer in organic light-emitting diodes
AUTHOR(S): Kim, Sang-Keol; Chung, Dong-Hoe; Hong, Jin-Woong; Chung, Taek-Gyun; Kim, Tae-Wan; Lee, Won-Jae; Jang, Kyung-Uk
CORPORATE SOURCE: Dept. of Electrical Engineering, Kwangwoon University, Seoul, S. Korea
SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (**2002**), 377, 129-132
CODEN: MCLCE9; ISSN: 1058-725X
PUBLISHER: Taylor & Francis Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors studied the effects of buffer layer in organic light-emitting diodes using poly(vinyl carbazole)(PVK), copper phthalocyanine(CuPc) and poly(3,4-ethylenedioxythiophene):poly(sty rene sulfonate)(PEDOT:PSS) buffer layers in a device structure of ITO/buffer/TPD/Alq3/Al. An improvement of external quantum efficiency by a factor of 4 was obtained when the PVK layer was used. The PEDOT:PSS layer not only gives an improvement of efficiency by a factor of 2, but reduces the operating voltage as well.
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(buffer layer containing; effects of PVK, CuPc and PEDOT:PSS buffer layer in organic **light-emitting** diodes on **luminance** and efficiency characteristics)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



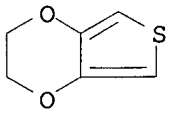
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76, 78
IT 50851-57-5 **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(buffer layer containing; effects of PVK, CuPc and PEDOT:PSS buffer

layer in organic **light-emitting** diodes on **luminance** and efficiency characteristics)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 26 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:593218 HCAPLUS
DOCUMENT NUMBER: 137:343612
TITLE: Highly efficient electroluminescence polymer blend in poly(p-phenylene vinylene) derivatives
AUTHOR(S): Jin, Sung-Ho; Gal, Yeong-Soon; Cho, Hyun-Nam
CORPORATE SOURCE: Department of Chemistry, Pusan National University, Pusan, 609-735, S. Korea
SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (**2002**), 377, 69-72
CODEN: MCLCE9; ISSN: 1058-725X
PUBLISHER: Taylor & Francis Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Asym. and color tunable polymer blend systems from poly[2-(3'-dimethylalkylsilylphenyl)-1,4-phenylene vinylene] (m-SiPhPPV) and MEH-PPV were characterized. The maximum absorption (UV) and photoluminescence (PL) peaks of the blending system were proportional to the their blending ratios. The electroluminescence (EL) spectra with various blending ratios of the m-SiPhPPV and MEH-PPV were mainly contributed from the MEH-PPV part. The turn-on voltages for single-layer light emitting diodes (LEDs) are .apprx.3 V for m-SiPhPPV and MEH-PPV and 8V for blending systems.
IT **126213-51-2**, PEDOT
(efficient **electroluminescence** of polymer blend in poly(p-phenylene vinylene) derivs. in relation to LED)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 66, 76
IT 50926-11-9, ITO **126213-51-2**, PEDOT
(efficient **electroluminescence** of polymer blend in poly(p-phenylene vinylene) derivs. in relation to LED)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L67 ANSWER 27 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:576102 HCAPLUS
DOCUMENT NUMBER: 137:270097
TITLE: White Light-Emitting Diodes from Novel Silicon-Based Copolymers Containing Both Electron-Transport Oxadiazole and Hole-Transport Carbazole Moieties in the Main Chain
AUTHOR(S): Paik, Kyung Lim; Baek, Nam Seob; Kim, Hwan Kyu; Lee, Ji-Hoon; Lee, Youngil
CORPORATE SOURCE: Center for Smart Light-Harvesting Materials and Department of Polymer Science Engineering, Hannam University, Daejon, 306-791, S. Korea
SOURCE: Macromolecules (**2002**), 35(18), 6782-6791
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

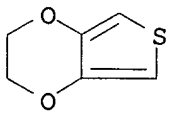
AB Si-based alternating copolymers containing both electron-transport oxadiazole and hole-transport carbazole moieties in the main chain (SiHMOXD/Cz 10-01) were synthesized by the Heck coupling reaction. The resulting polymers exhibit a strong UV-visible absorption band at 345-356 nm in CHCl3 solution and in film state. Their PL spectra show a maximum band around 435-485 nm in the blue region. The light-emitting diodes of Al (200 nm)/Ca (50 nm)/EL polymer (80 nm)/PEDOT (50 nm)/ITO were successfully fabricated. And, J-V curves show a turn-on voltage of 6-7 V. Their EL properties depend strongly on both the applied voltage and the loading amount of hole-transport carbazole moieties in the present copolymers. With the applied voltage, these emissive EL bands were red shifted from blue region to red region. Also, the intensity of a blue EL band at the relatively high operating voltages increases with the loading amount of carbazole units. The LED device with the copolymer of SiHMOXD/Cz 19 exhibits the almost same intensity of two bands, like two crests, giving a strong white color. The blue EL color comes from the carbazole units in these Si-based copolymers. The latter red EL color comes from a specific charge complex with oxadiazole (and carbazole moieties). The new red band is exhibited only in EL but not in PL spectra. The EL device based on SiHMOXD/Cz 19 has a luminescence efficiency of 0.052 lm/W and a power efficiency of 0.13 cd/A at an applied voltage of 9 V And, the maximum luminance of the white emissive color was 6.04 cd/m2 at an applied voltage of 17 V. From the photophys. studies, a specific intramol. charge complex is proposed.

IT **126213-51-2**, PEDOT
(white **light-emitting** diodes from novel silicon-based copolymers containing both electron-transport oxadiazole and hole-transport carbazole moieties in main chain)

RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

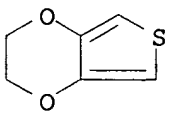


CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38
IT **126213-51-2**, PEDOT
(white **light-emitting** diodes from novel silicon-based copolymers containing both electron-transport oxadiazole and hole-transport carbazole moieties in main chain)
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 28 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:487187 HCAPLUS
DOCUMENT NUMBER: 137:352666
TITLE: Triphenylamine-substituted polyfluorene-a stable blue-emitter with improved charge injection for light-emitting diodes
AUTHOR(S): Ego, Christophe; Grimsdale, Andrew C.; Uckert, Frank; Yu, Gang; Srdanov, Gordana; Mullen, Klaus
CORPORATE SOURCE: Max-Planck Institute for Polymer Research, Mainz, D-55128, Germany
SOURCE: Advanced Materials (Weinheim, Germany) (**2002**), 14(11), 809-811
CODEN: ADVMEW; ISSN: 0935-9648
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:352666
AB The authors have made a polymer PTPAF, with bulky hole-transporting triphenylamine groups as sidechains, by a simple two-step procedure from com. available materials. This polymer not only shows a pure blue initial emission with no aggregate/excimer emission, but also much improved hole injection over standard PDAFs, thus potentially enabling efficient stable blue LEDs to be obtained with-out the need for a hole-transporting layer.
IT **126213-51-2**, PEDOT
(conductive polymer electrode; triphenylamine-substituted polyfluorene as stable blue-emitter with improved charge injection for **light-emitting** diodes)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 22-13 (Physical Organic Chemistry)
Section cross-reference(s): **36**, 73
IT **126213-51-2**, PEDOT
(conductive polymer electrode; triphenylamine-substituted polyfluorene as stable blue-emitter with improved charge injection for **light-emitting** diodes)
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 29 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:415612 HCAPLUS
DOCUMENT NUMBER: 137:147142
TITLE: Time-gated electroluminescence spectroscopy of polymer light-emitting diodes as a probe of carrier dynamics and trapping
AUTHOR(S): Lupton, J. M.; Klein, J.
CORPORATE SOURCE: Max Planck Institute for Polymer Research, Mainz, D-55128, Germany
SOURCE: Physical Review B: Condensed Matter and Materials Physics (**2002**), 65(19), 193202/1-193202/4
CODEN: PRBMDO; ISSN: 0163-1829
PUBLISHER: American Physical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We present time-gated electroluminescence (EL) spectroscopy of a polyfluorene-based conjugated polymer. The technique is shown to be sensitive enough to pick out impurity emission orders of magnitude weaker than the cw emission. By considering the temperature dependence of the delayed emission spectra and also the dependence on a constant-bias offset it is shown that both geminate pair formation and carrier trapping during operation result in a long EL decay tail. The technique also provides a direct probe of the validity of the Einstein law in conjugated polymers. The diffusion mobility is found to exceed the drift mobility by a factor of 12.
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(charge transport layer containing; time-gated **electroluminescence** spectroscopy of polymer **light-emitting** diodes as a probe of carrier dynamics and trapping)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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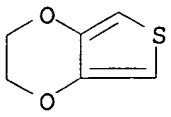
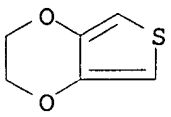


CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38, 76
IT 50851-57-5 **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(charge transport layer containing; time-gated **electroluminescence** spectroscopy of polymer **light-emitting** diodes as a probe of carrier dynamics and trapping)
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 30 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:415529 HCAPLUS
DOCUMENT NUMBER: 137:192414
TITLE: Bright and efficient exciplex emission from light-emitting diodes based on hole-transporting amine derivatives and electron-transporting polyfluorenes
AUTHOR(S): Jiang, Xuezhong; Liu, Michelle S.; Jen, Alex K.-Y.
CORPORATE SOURCE: Department of Materials Science and Engineering, University of Washington, Seattle, WA, 98195, USA
SOURCE: Journal of Applied Physics (**2002**), 91(12), 10147-10152
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report highly efficient and bright emission from exciplexes generated between hole-transporting amine derivs. and two electron-transporting fluorene-dicyanophenyl (FCNP) copolymers. These exciplexes were formed at either the interface between tetraphenyldiamine-containing perfluorocyclobutane polymers and the FCNP copolymers, or in the blends of the FCNP copolymers with small mol. amine derivs. such as triphenylamine, N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine, and N,N'-diphenyl-N,N'-bis(1-naphthyl)-[1,1'-biphenyl]-4,4'-diamine. The exciplex emission is largely dependent on the composition of the hole-transporting materials. The best device derived from these exciplexes demonstrated a very low turn-on voltage (2.8 V), a high external quantum efficiency (0.91%), and a high brightness of 3370 cd/m2. The desirable properties of these devices were attributed to the excellent electron transport ability of the FCNP copolymers.
IT **126213-51-2**, PEDOT
(bright and efficient exciplex emission from **light-emitting** diodes based on hole-transporting amine derivs. and electron-transporting polyfluorenes)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT 603-34-9, Triphenylamine 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine 123847-85-8, N,N'-Diphenyl-N,N'-bis(1-naphthyl)-[1,1'-biphenyl]-4,4'-diamine **126213-51-2**, PEDOT 133019-09-7, Poly(9,9-dihexyl-9H-fluorene-2,7-diyl) 162152-43-4, Poly(2,5-dicyano-1,4-phenylene) 269078-60-6 275794-04-2 275794-06-4
(bright and efficient exciplex emission from **light-emitting** diodes based on hole-transporting amine derivs. and electron-transporting polyfluorenes)
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 31 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:399209 HCAPLUS
DOCUMENT NUMBER: 137:101111
TITLE: Enhanced electroluminescence using polystyrene as a matrix
AUTHOR(S): He, Gufeng; Li, Yongfang; Liu, Jie; Yang, Yang
CORPORATE SOURCE: Center for Molecular Science, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SOURCE: Applied Physics Letters (**2002**), 80(22), 4247-4249
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Poly[2-methoxy-5-(2'-ethyl-hexyloxy)-1,4-phenylene vinylene] (MEH-PPV) blends with polystyrene (PS) were used as emitting layers in polymer light-emitting diodes. Studies of photoluminescence and electroluminescence (EL) of the blends indicate that interchain interactions were tremendously suppressed due to the dilution effect. The device of MEH-PPV/PS (50/50) shows much higher EL efficiency compared to pure MEH-PPV devices. Since there is neither energy transfer nor charge transfer involved in MEH-PPV/PS blends, the observed efficiency enhancement is mainly attributed to the suppressed interchain species, which are responsible for the low photoluminescence yields. In addition, the addition of PS into MEH-PPV improves the thermal stability of polymer thin films and reduces the sensitivity of device performance to processing conditions.
IT **126213-51-2**, PEDOT
(enhanced **electroluminescence** using polystyrene as a

matrix)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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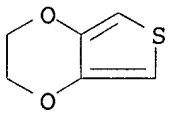

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, **76**
IT 9003-53-6, Polystyrene **126213-51-2**, PEDOT 138184-36-8, MEH-PPV
(enhanced **electroluminescence** using polystyrene as a matrix)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 32 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:329538 HCAPLUS
DOCUMENT NUMBER: 137:63577
TITLE: Protonation and Subsequent Intramolecular Hydrogen Bonding as a Method to Control Chain Structure and Tune Luminescence in Heteroatomic Conjugated Polymers
AUTHOR(S): Monkman, Andrew P.; Plsson, Lars-Olof; Higgins, Roger W. T.; Wang, Changsheng; Bryce, Martin R.; Batsanov, Andrei S.; Howard, Judith A. K.
CORPORATE SOURCE: Department of Physics and the Department of Chemistry, University of Durham, Durham, DH1 3LE, UK
SOURCE: Journal of the American Chemical Society (**2002**), 124(21), 6049-6055
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects were studied, of protonation on the structural and spectroscopic properties of 1,4-dimethoxy-2,5-bis(2-pyridyl)benzene (1) and the prepared related AB copolymer poly{2,5-pyridylene-co-1,4-[2,5-bis(2-ethylhexyloxy)]phenylene} (2). The x-ray crystallog. data of 9, 1,4-dimethoxy-2,5-bis(2-pyridyl)benzene bis(formic acid) complex (3), and 1,4-dimethoxy-2,5-bis(2-pyridinium)benzene bis(tetrafluoroborate salt) (4) indicate that reaction of formic acid with 1 does not form an ionic pyridinium salt in the solid state, rather, the product 3 is a mol. complex with strong hydrogen bonds between each nitrogen atom and the hydroxyl hydrogen in formic acid. In contrast, reaction of 1 with tetrafluoroboric acid leads to the

dication salt 4 with significant intramol. hydrogen bonding (N-H···O-Me) causing planarization of the mol. The pyridinium and benzene rings in 4 form a dihedral angle of only 3.9 degrees (cf. pyridine-benzene dihedral angles of 35.4 and 31.4 degrees in 1, and 43.8 degrees in 3). Accordingly, there are large red shifts in the optical absorption and emission spectra of 4, compared to 1 and 3. Polymer 2 displays a similar red shift in its absorption and photoluminescence spectra upon treatment with strong acids in neutral solution (e.g. methanesulfonic acid, camphorsulfonic acid, and hydrochloric acid). The effect is also observed in films of polymer 2 doped with strong acids. Excitation profiles show that emission arises from both protonated and nonprotonated sites in the polymer backbone. The protonation of the pyridine rings in polymer 2, accompanied by intramol. hydrogen bonding to the oxygen of the adjacent solubilizing alkoxy substituent, provides a novel mechanism for driving the polymer into a near-planar conformation, thereby extending the π-conjugation, and tuning the absorption and emission profiles. The electroluminescence of a test device of configuration ITO/PEDOT/polymer 2/Ca/Al is similarly red-shifted by protonation of the polymer.

IT **126213-51-2**, PEDOT
(test device; preparation and structure of monomer and of poly(pyridylene-ethylhexyloxyphenylene) and protonation and H bonding as means for tuning **luminescence**)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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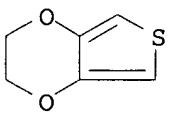

CC 35-7 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): **36**, 73

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 50926-11-9, Indium tin oxide **126213-51-2**, PEDOT
(test device; preparation and structure of monomer and of poly(pyridylene-ethylhexyloxyphenylene) and protonation and H bonding as means for tuning **luminescence**)

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 33 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:232256 HCAPLUS
DOCUMENT NUMBER: 136:386736
TITLE: Electronic devices as platforms for studying visible and IR characteristics in conducting polymers
AUTHOR(S): Schwendeman, Irina; Hickman, Roberta; Zong, Kyukwan; Welsh, Dean M.; Reynolds, John R.;

Hwang, Jungseek; Tanner, David B.
CORPORATE SOURCE: Department of Chemistry, Ctr. for Macromolecular Science and Engineering, University of Florida, Gainesville, FL, 32611, USA
SOURCE: PMSE Preprints (2002), 86, 55-56
CODEN: PPMRA9; ISSN: 1550-6703
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB The electrochromism of poly(3,4-alkylenedioxythiophene)s (PXDOT)s and poly(3,4-alkylenedioxypyrrole)s (PXDOP)s is characterized by fast switching, high contrast ratio, and outstanding coloration efficiency. Polythiophenes, poly(bis(3'-methyl)-3,4-propylenedioxythiophene) (PProDOT-Me2), poly(3,4-ethylenedioxythiophene) (PEDOT), poly(3,6-bis(3,4-ethylenedioxythienyl)-N-methylcarbazole) (PBEDOT-NMeCz) and polypyrroles, poly(3,4-ethylenedioxypyrrole) (PEDOP) and poly(3,4-propylenedioxypyrrole) (PProDOP), and N-substituted analogs, were assembled into electrochromic devices. One device has an outward facing design with the electrochromic polymer electrodeposited onto a porous gold/Mylar electrode, thus allowing modulation of the reflectivity of the gold surface. This device was used to study in situ optical properties of various conducting polymers over a broad range of the electromagnetic spectrum. A second type of device is a transmission/absorption assembly. To broaden the absorption peak through the visible spectrum, bilayers of two cathodically coloring polymers were used. The use of carefully designed complementary polymers is a promising route for achieving control over the color, brightness and environmental stability of an electrochromic window.
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(PEDOT; **electronic device** platforms for studying optical absorption and reflectance and transmittance and electrochromism of conducting polymers)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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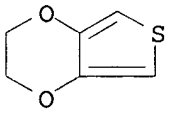

IT **255901-53-2**
(PProDOT-Me2; **electronic device** platforms for studying optical absorption and reflectance and transmittance and electrochromism of conducting polymers)
RN 255901-53-2 HCAPLUS
CN 2H-Thieno[3,4-b][1,4]dioxepin, 3,4-dihydro-3,3-dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 255901-50-9
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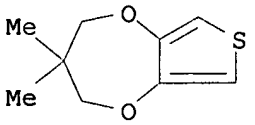
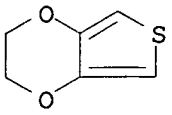


CC 36-9 (Physical Properties of Synthetic High **Polymers**)
Section cross-reference(s): 73, 76
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(PEDOT; **electronic device** platforms for studying optical absorption and reflectance and transmittance and electrochromism of conducting polymers)
IT **255901-53-2**
(PProDOT-Me2; **electronic device** platforms for studying optical absorption and reflectance and transmittance and electrochromism of conducting polymers)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 34 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:229676 HCAPLUS
DOCUMENT NUMBER: 137:70179
TITLE: Blue light emitting polymers and devices
AUTHOR(S): Pei, Q.; Pyo, S.; Chang, Shun-Chi; Yang, Yang
CORPORATE SOURCE: SRI International, Menlo Park, CA, USA
SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (**2002**), 43(1), 113-114
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB Poly(paraphenylene) (PPP) derivs. were synthesized with good solubility, good film-forming properties, and high photoluminescence and electroluminescence efficiency using the rigid-dual function triarylamine moieties as the side groups. The rigid PPPs showed high thermal stability while retaining good semicond., essential for high-performing polymer light emitting diode (LEDs). This synthesis technique could also be used to prepare other conjugated polymers with various band gaps and emission colors.
IT **126213-51-2**, PEDOT
(blue **light emitting** polymers and devices)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

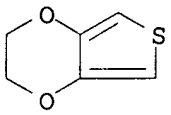


CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38
IT 15082-28-7 25190-62-9D, Poly(p-phenylene), triarylamine side group **126213-51-2**, PEDOT 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl)
(blue **light emitting** polymers and devices)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 35 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:229652 HCAPLUS
DOCUMENT NUMBER: 137:20708
TITLE: Exploratory synthesis and luminescent property of novel π-conjugated tin-based alternating copolymers
AUTHOR(S): Baek, N. S.; Kim, H. K.; Chae, E. H.; Kim, B. H.; Lee, J-H.
CORPORATE SOURCE: National Creative Initiative Center Smar Light-Harvesting Materials, Dep. Polymer Sci. Eng., Hannam Univ., Taejon, 306-791, S. Korea
SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (**2002**), 43(1), 75-76
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB Tin-based copolymers with a uniform π-conjugated segment were synthesized using the Heck reaction. The incorporation of organotin units with aromatic groups on Sn into π-conjugated systems resulted in improved processability and provided for interrupted π-conjugation length. The resulting polymers were highly soluble in common organic solvents and could be spin-cast onto various substrates to obtain highly transparent homogeneous thin films. The glass transition temperature of the conjugated Sn polymers is 70 to 90°. The UV-visible absorption spectral band of the polymers is found at 350 to 394 nm in chloroform solution and film, and the photoluminescence (PL) spectra exhibited blue emissive color at 470-502 nm. Multi-layer LEDs of ITO/PEDOT/ Sn Polymer/Ca/Al were fabricated. The EL devices exhibited especially low turn-on voltage of less than 5 V, as determined from the I-V curve and strong blue EL at 470 nm. The EL devices with blends of polymers and PVK showed dramatically improved EL efficiency, brightness, and color purity.
IT **126213-51-2**, PEDOT
(preparation and **luminescence** of π-conjugated Sn-polyphenylene-vinylene alternating copolymers and use in double layer EL devices)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 35-7 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): 29, **36**, 73, 76
IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 25067-59-8, PVK 50926-11-9, Indium tin oxide **126213-51-2**, PEDOT
(preparation and **luminescence** of π-conjugated Sn-polyphenylene-vinylene alternating copolymers and use in double layer EL devices)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

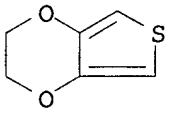
L67 ANSWER 36 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:197559 HCAPLUS
DOCUMENT NUMBER: 137:25619
TITLE: Efficient blue polymer light-emitting diodes from a novel biphenyl derivative
AUTHOR(S): Jin, Y.-D.; Chen, H.-Z.; Heremans, P. L.; Aleksandrzak, K.; Geise, H. J.; Borghs, G.; Van der Auweraer, M.
CORPORATE SOURCE: IMEC, Louvain, B 3001, Belg.
SOURCE: Synthetic Metals (**2002**), 127(1-3), 155-158
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel blue-emitting soluble biphenyl derivative 4,4-bis[2-(3,4,5-trimethoxyphenyl)vinyl]biphenyl (TMPVB) was synthesized. It was dispersed into poly[2-(6'-cyano-6'-methylheptyloxy)-1,4-phenylene] (CNPPP), to form a blend film as the emissive layer in organic light-emitting diodes (OLEDs). Efficient Forster energy transfer from CNPPP to TMPVB mols. is proved in this film. We find that the emission is dominantly from the TMPVB mols. during the device operation. The best performing device has a peak external quantum efficiency of 1.2%, which is comparable to the best results obtained for devices based on blue-emitting polymers. Forster energy transfer and carrier trapping are considered to be the main mechanisms for exciton formation on TMPVB mols. under elec. excitation.
IT **155090-83-8**
(efficient blue polymer **light-emitting** diodes based on TMPVB biphenyl derivative and containing)
RN 155090-83-8 HCAPLUS
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, **36**
IT 7440-22-4, Silver, uses 50926-11-9, ITO 137948-22-2, Magnesium alloy, Mg 91, Ag 9.1 **155090-83-8**
(efficient blue polymer **light-emitting** diodes based on TMPVB biphenyl derivative and containing)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 37 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:173834 HCAPLUS
DOCUMENT NUMBER: 137:63566
TITLE: Synthesis and characterization of

poly(p-phenylenevinylene) based alternating copolymers for light emitting diodes

AUTHOR(S): Jin, Sung-Ho; Jung, Joong-Eun; Yeom, In-Suk; Moon, Seong-Bae; Koh, Kwangnak; Kim, Sung-Hoon; Gal, Yeong-Soon
CORPORATE SOURCE: Department of Chemistry Education, Pusan National University, Pusan, 609-735, S. Korea

SOURCE: European Polymer Journal (**2002**), 38(5), 895-901
CODEN: EUPJAG; ISSN: 0014-3057
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A series of p-phenylenevinylene and aromatic amine based alternating copolymers, poly(2,5-dihexyl-1,4-phenylenevinylene-N-phenyl-4',4''-diphenylene vinylene) (I) and poly(2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylenevinylene-alt-N-phenyl-4'',4'''-diphenylenevinylene) (II) were prepared via Horner-Wittig-Emmons reaction. The polymers are soluble in organic solvents and solns. were spin-cast onto ITO substrates obtaining films that are free of defects. The copolymers have strong optical absorption bands at 418 and 443 nm, due to π-π* transitions of the conjugated backbone. The phenylenevinylene moiety is the emitter and the aromatic amine is the hole transport moiety that also enhances the thermal stability of the copolymers up to 425°. A light emitting diode (LED) was fabricated by placing I or II between ITO and Ca/Al electrodes and using a poly(2,3-ethylenedioxythiophene)-poly(styrenesulfonate) PEDOT-PSS layer as charge injection layer. The forward bias turn-on voltage of the LED was 4.4 V for I and 2.6 V for II. The emission colors could be tuned from 488 to 506 nm under an applied elec. field, and the effect is attributed to alkyl and alkyloxy substituents.

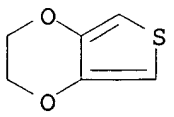
IT **126213-51-2**, PEDOT
(poly(styrenesulfonate) charge injection layer; preparation and electrooptical properties of poly(p-phenylenevinylene-aminophenylene)s and use as emitter/transport layer in **light emitting** diodes)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 35-7 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): **36**, 73, 76

IT **126213-51-2**, PEDOT
(poly(styrenesulfonate) charge injection layer; preparation and electrooptical properties of poly(p-phenylenevinylene-aminophenylene)s and use as emitter/transport layer in **light emitting** diodes)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 38 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:847215 HCAPLUS
DOCUMENT NUMBER: 136:109705
TITLE: Effect of Foerster Energy Transfer and Hole Transport Layer on Performance of Polymer Light-Emitting Diodes
AUTHOR(S): Ding, Liming; Karasz, Frank E.; Lin, Zhiqun; Zheng, Min; Liao, Liang; Pang, Yi
CORPORATE SOURCE: Department of Polymer Science Engineering, University of Massachusetts, Amherst, MA, 01003, USA
SOURCE: Macromolecules (**2001**), 34(26), 9183-9188
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

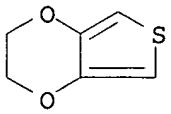
AB The novel violet-blue-emitting electroluminescent polymer I was blended at three different weight ratios with the green-emitting polymer II, providing materials which were studied in terms of their absorbance, photoluminescence, electroluminescence, and morphol. The absorption and PL spectra in dilute solution and in the solid state were compared. Substantial red shifts were observed in photoluminescence from the solid state, which were attributed to intermol. interactions in the films. Only green emission was obtained from films of the polymer blends and from corresponding double-layer LEDs, indicating an almost complete Foerster energy transfer from I to II. Morphol. studies indicate that the immiscibility of the two polymers and their differences in CHCl3 solubility result in submicron phase separation during film preparation In a blend with a high concentration of I, large domains of I were responsible for an incomplete energy transfer, especially noticeable in the solid-state photoluminescence. In double-layer LEDs, both PPV and polyethylene dioxythiophene/polystyrene sulfonate (PEDOT/PSS) were used as hole-transport layers to increase device efficiency. At 8 V bias, bright green emission (2700 cd/m2) was observed in an ITO/PEDOT/II/Ca device with an external quantum efficiency of 0.69%. The effectiveness of the two hole-transport materials was compared.

IT **126213-51-2**, PEDOT
(effect of Foerster energy transfer and hole transport layer on performance of polymer **light-emitting** diodes)

RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 38
IT 7440-70-2, Calcium, uses 50851-57-5 50926-11-9, Indium tin oxide **126213-51-2**, PEDOT
(effect of Foerster energy transfer and hole transport layer on performance of polymer **light-emitting** diodes)
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 39 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:400158 HCAPLUS
DOCUMENT NUMBER: 135:187369
TITLE: High brightness and efficiency green light-emitting diodes based on fluorene-containing conjugated polymers and associated blends
AUTHOR(S): Palilis, Leonidas C.; Wilkinson, Chris I.; Lidzey, David G.; Bradley, Donal D. C.; Inbasekaran, Michael; Wu, Weishi W.
CORPORATE SOURCE: Center for Molecular Materials Department of Physics and Astronomy, University of Sheffield, Sheffield, S3 7RH, UK
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (**2001**), 4105(Organic Light-Emitting Materials and Devices IV), 390-404
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report on the fabrication and properties of single layer green light-emitting diodes (LEDs) based on fluorene- containing conjugated polymers and associated blends. The authors used a new green fluorene based conjugated polymer (5BTF8) as the emissive material as well as the host in blends with a guest hole transport triarylamine/fluorene copolymer (BFB) to fabricate bright and efficient single layer green polymer light-emitting diodes (PLEDs). An enhancement in both the electroluminescence quantum and power efficiency is seen for the blend. This observation indicates that the hole transport material leads to a significant improvement in hole injection and transport and thus to an improved charge carrier balance factor. A higher brightness and a lower turn on as well as operating voltage are also achieved for the blend. The emission from a green single layer LED with 5BTF8/BFB (4/1) as the emissive layer reaches a maximum brightness of 35000 cd/m2 with a maximum external quantum efficiency of 1.3% or 4.2 cd/A and a maximum power efficiency of 2.5 lm/W. Novel small area LEDs were also fabricated using a SiN insulating layer on top of the ITO that allowed much higher brightnesses to be achieved

compared to the standard area LEDs due to the reduced heating and therefor to a better thermal management of the device. The emission from a PEDOT/5BTF8 small area LED reached a maximum brightness of 155,000 and 6,500,000 cd/m2 in d.c. and pulsed mode, resp.

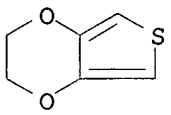
IT **126213-51-2**, PEDOT
(high brightness and efficiency green **light-emitting** diodes based on fluorene-containing conjugated polymers and associated blends)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**

IT 9003-53-6, Polystyrene **126213-51-2**, PEDOT 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 210347-52-7 223569-32-2
(high brightness and efficiency green **light-emitting** diodes based on fluorene-containing conjugated polymers and associated blends)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 40 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:400150 HCAPLUS
DOCUMENT NUMBER: 135:187366
TITLE: High-bright and efficient green light-emitting diode using poly[2-(9,9-bishexylfluorenyl)-1,4-phenylenevinylene]
AUTHOR(S): Lee, Sang Ho; Jang, Bo-Bin; Tsutsui, Tetsuo
CORPORATE SOURCE: CREST, Japan Science and Technology Corporation (JST), Japan
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (**2001**), 4105(Organic Light-Emitting Materials and Devices IV), 322-327
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 12 The poly[2-(9',9'-bishexylfluorenyl)-1,4-phenylenevinylene] (BHF-PPV), which is PPV containing 9,9- bishexylfluorene as a pendant group, was synthesized by the modified Gilch dehydrohalogenation polymerization of the corresponding bischloromethyl-substituted benzene monomer. The energy levels of the HOMO and the LUMO of BHF-PPV

were 5.35 and 2.94 eV as determined by cyclic voltammetry. Band gap, estimated from both cyclic voltammetry and optical absorption measurement, agrees well to be 2.41 eV. The EL spectrum showed two peaks at 504 and 535 nm, which very closely resembled the PL spectrum of the polymer film, demonstrating that the PL and EL originate from the same excited state. Blue-green LED was fabricated using BHF-PPV as the emissive layer, PEDOT:PSS as the hole-injection layer, and Mg-Ag alloy as the cathode. The device emitted bright blue-green light with turn-on voltage of 3.0 V and exhibited luminance efficiency and power efficiency of 0.64 cd/A and 0.45 lm/W, resp., at the luminance of 105.1 cd/m2 driven at the voltage of 4.5 V and c.d. of 16.37 mA/cm2.

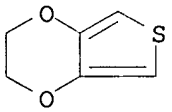
IT **126213-51-2**, PEDOT
(high-bright and efficient green **light-emitting** diode using poly[2-(9,9-bishexylfluorenyl)-1,4-phenylenevinylene])

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 72

IT 37271-44-6 50851-57-5 50926-11-9, Indium tin oxide
126213-51-2, PEDOT
(high-bright and efficient green **light-emitting** diode using poly[2-(9,9-bishexylfluorenyl)-1,4-phenylenevinylene])

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 41 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:356027 HCAPLUS
DOCUMENT NUMBER: 135:107873
TITLE: A novel electroluminescent oligothiophene
AUTHOR(S): Gigli, G.; Anni, M.; Theander, M.; Cingolani, R.; Barbarella, G.; Favaretto, L.; Inganas, O.
CORPORATE SOURCE: Applied Physics, Department of Physics (IFM), Linkoping University, Linkoping, S-581 83, Swed.
SOURCE: Synthetic Metals (**2001**), 119(1-3), 581-582
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The photoluminescence (PL) and electroluminescence (EL) of

3,3',4''',3''''-tetracyclohexyl-3'',4''-dihexyl-2,2':5',2'':5'',2''':5''',2''''-quinquethiophene 1'',1''-dioxide (T5c), were measured and studied. The PL efficiency in the solid state is 23%, and the high electron affinity together with good processability make this material competitive for applications in organic emitting diodes (LED)s. In an LED assembly containing a layer of T5c with poly(3,4-ethylene dioxythiophene) PEDOT layer, a PL efficiency of 0.1% was demonstrated.

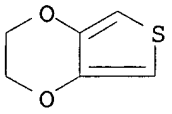
IT **126213-51-2**, Poly(3,4-ethylene dioxythiophene)
(test device; photoluminescence and **electroluminescence** efficiency of cyclohexyl-hexyl oligothiophene dioxide for LEDs)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 36-5 (Physical Properties of Synthetic High **Polymers**)
Section cross-reference(s): 73

IT **126213-51-2**, Poly(3,4-ethylene dioxythiophene)
(test device; photoluminescence and **electroluminescence** efficiency of cyclohexyl-hexyl oligothiophene dioxide for LEDs)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 42 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:315958 HCAPLUS
DOCUMENT NUMBER: 135:92968
TITLE: Efficient and Bright Blue Electroluminescence of Poly[4,4'-biphenylene-α-(9'',9''-dihexyl-3-fluorenyl)vinylene]
AUTHOR(S): An, Byeong-Kwan; Kim, Yun-Hi; Shin, Dong-Cheol; Park, Soo Young; Yu, Han-Seong; Kwon, Soon-Ki
CORPORATE SOURCE: Department of Polymer Science & Engineering and Research Institute of Industrial Technology, Gyeongsang National University, Jinju, 660-701, S. Korea
SOURCE: Macromolecules (**2001**), 34(12), 3993-3997
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A blue electroluminescent polymer, poly(biphenylenevinylene) derivative containing a bulky fluorenyl group, was prepared by nickel-catalyzed coupling of 1,2-Bis(4'-bromophenyl)-1-(9'',9''-dihexyl-3-fluorenyl)ethene (BPHFE). The structure and properties of the polymer, PBPHFV, were studied; the polymer had good solubility

and thermal stability. The PBPHFV films showed maximum absorption and emission peaks at 370 and 485 nm, resp. A blue electroluminescence (λmax = 465 nm) was observed with intensity of 4116 cd/m2 for a light-emitting diode testing assembly of ITO/PEDOT/PBPHFV/LiF/Al; maximum efficiency was 0.22 lm/W with a turn-on voltage of 4.3 V. For optimum ratio of PBPHFV to PVK blend as 1:5, the luminance and efficiency of the diode reached up to 9342 cd/m2 and 1.66 lm/W, resp.

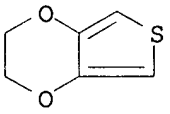
IT **126213-51-2**, PEDOT
(fluorenyl-polyphenylenevinylene blend; preparation and bright blue **electroluminescence** of poly[biphenylene-(dihexyl-fluorenyl)vinylene] and **luminance** efficiency of diode assemblies)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 35-7 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): **36**, 73

IT **126213-51-2**, PEDOT
(fluorenyl-polyphenylenevinylene blend; preparation and bright blue **electroluminescence** of poly[biphenylene-(dihexyl-fluorenyl)vinylene] and **luminance** efficiency of diode assemblies)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 43 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:249310 HCAPLUS
DOCUMENT NUMBER: 135:68274
TITLE: Correlation between dark spot growth and pinhole size in organic light-emitting diodes
AUTHOR(S): Lim, Shuang Fang; Ke, Lin; Wang, Wei; Chua, Soo Jin
CORPORATE SOURCE: Institute of Materials Research and Engineering, 117602, Singapore
SOURCE: Applied Physics Letters (**2001**), 78(15), 2116-2118
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In situ exptl. observations of dark spot growth in organic light-emitting diodes using optical microscopy show a linear rate of growth for the area of all the dark spots. The authors used uniformly sized SiO2 micro particles to intentionally create size-controllable pinholes on the cathode protective layer.

Subsequently, the authors observed initial formation of dark spots as a result of these pinholes and then monitored their growth. Due to usage of particles of various diams., the authors were able to linearly correlate the growth rate with pinhole size. This allows one to estimate the original pinhole sizes that gave rise to the dark spots, which the authors believe were initiated by dust particles. Studies verify that dark spot formation is due to pinholes on the protective layer that creates pathways for H2O or O permeation, and that dark spot growth is dependent on the pinhole sizes.

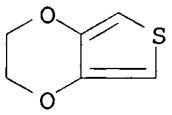
IT **126213-51-2**
(PEDOT; correlation between dark spot growth and pinhole size in organic **light-emitting** diodes)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**

IT **126213-51-2**
(PEDOT; correlation between dark spot growth and pinhole size in organic **light-emitting** diodes)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 44 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:71957 HCAPLUS
DOCUMENT NUMBER: 134:373497
TITLE: Forster energy transfer and control of the luminescence in blends of an orange-emitting poly(p-phenylenevinylene) and a red-emitting tetraphenylporphyrin
AUTHOR(S): Morgado, Jorge; Cacialli, Franco; Iqbal, Rifat; Moratti, Stephen C.; Holmes, Andrew B.; Yahioglu, Gokhan; Milgrom, Lionel R.; Friend, Richard H.
CORPORATE SOURCE: Departamento de Engenharia Quimica, Instituto Superior Tecnico, Lisbon, P-1049-001, Port.
SOURCE: Journal of Materials Chemistry (**2001**), 11(2), 278-283
CODEN: JMACEP; ISSN: 0959-9428
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors report on the luminescence of a tetraphenylporphyrin, TPP-d, blended into poly[2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylenevinylene], MEH-PPV. The authors find significant energy

transfer from MEH-PPV to the porphyrin, in spite of the low absorption of the porphyrin at the emission wavelength of MEH-PPV, reflected in a Forster transfer radius (2.5 nm) smaller than for materials with larger spectral overlap. The overall photoluminescence, PL, efficiency decreases monotonically with increasing porphyrin content, whereas the porphyrin contribution to the total efficiency, referred as an apparent PL efficiency, exhibits a maximum at 1.4% porphyrin content (by weight). The authors attribute this non-monotonic behavior to the interplay of the exciton transfer probability and PL quenching, both of which increase with concentration The authors also observed the energy transfer under elec. excitation, but noticed that, at low concns., the porphyrin contribution to the electroluminescence is higher than that observed in PL. This indicates significant emission from excitons formed directly at the porphyrin sites, which probably act as charge trapping sites. The authors also compare the luminescence properties of the blends with those of copolymers based on the same host-guest pair.

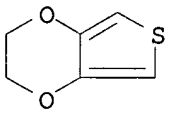
IT **126213-51-2**
(Forster energy transfer and control of **luminescence** in blends of orange-emitting poly(p-phenylenevinylene) and a red-emitting tetraphenylporphyrin)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76

IT 25067-59-8, Polyvinylcarbazole 110452-48-7 **126213-51-2**
138184-36-8, MEH-PPV 207222-66-0
(Forster energy transfer and control of **luminescence** in blends of orange-emitting poly(p-phenylenevinylene) and a red-emitting tetraphenylporphyrin)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 45 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:66312 HCAPLUS
DOCUMENT NUMBER: 134:333482
TITLE: Graded doping profiles for reduction of carrier trapping in organic light-emitting devices incorporating doped polymers
AUTHOR(S): Chang, Hsin-Hua; Wu, Chung-Chih; Yang, Cheng-Chung; Chen, Chieh-Wei; Lee, Cheng-Chung
CORPORATE SOURCE: Department of Electrical Engineering and Graduate Institute of Electro-Optical

Engineering, National Taiwan University, Taipei, 10617, Taiwan
SOURCE: Applied Physics Letters (**2001**), 78(5), 574-576
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Dispersing emissive dopants into luminescent polymers is an effective approach to enhance luminescence and to tune emission color in organic light-emitting devices incorporating polymer films. However, the carrier trapping effect due to emissive dopants often causes deterioration of elec. characteristics. By introducing a graded doping profile to match the carrier recombination zone in the doped polymer, the carrier trapping, and the deterioration of elec. characteristics can be minimized while the enhancement in efficiency maintains. The finite-source dye-diffusion thermal transfer was used to produce graded doping profiles into a luminescent polymer. The effectiveness of this approach was demonstrated in both single-layer and heterostructure devices incorporating doped polymers.

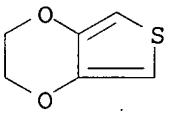
IT **126213-51-2**, Poly(3,4-ethylene dioxythiophene)
(graded doping profiles for reduction of carrier trapping in organic **light-emitting** devices incorporating doped polymers)

RN 126213-51-2 HCAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 69, 76

IT 25067-59-8, Polyvinyl carbazole 50851-57-5 **126213-51-2**, Poly(3,4-ethylene dioxythiophene) 150405-69-9
(graded doping profiles for reduction of carrier trapping in organic **light-emitting** devices incorporating doped polymers)

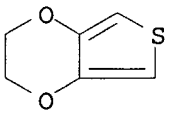
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 46 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:897686 HCAPLUS
DOCUMENT NUMBER: 134:287247
TITLE: Organic light emitting diodes fabricated with single wall carbon nanotubes dispersed in a hole conducting buffer: the role of carbon nanotubes in a hole conducting polymer

AUTHOR(S): Woo, H. S.; Czerw, R.; Webster, S.; Carroll, D. L.; Park, J. W.; Lee, J. H.
CORPORATE SOURCE: Department of Physics and Astronomy, Clemson University, Clemson, SC, 29634, USA
SOURCE: Synthetic Metals (**2001**), 116(1-3), 369-372
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To study the role of single wall C nanotubes (SWNTs) in a hole conducting polymer, organic light emitting diodes (OLEDs) were fabricated with a conjugated emissive copolymer, poly(3,6-N-2-ethylhexyl carbazolyl cyanoterephthalidence) (PECCP) and SWNTs dispersed in a hole conducting buffer polymer, polyethylene dioxythiophene (PEDOT). Devices made with SWNTs dispersed in PEDOT and devices made without SWNTs in the PEDOT emit green light at 2.37 eV as expected for PECCP. However, the device made with SWNTs in the buffer layer shows a significant decrease in the electroluminescence (EL) as compared to that of the device without the SWNTs. In contrast, the photoluminescence (PL) from the same organic layer combination, excited from the PECCP side and measured through the PEDOT and the In Sn oxide glass, shows very little difference between the films with and without the SWNTs. The current-voltage (I-V) characteristics of OLEDs with SWNTs show a lower I-V power dependence (I-V2) near 1-2 V than that of the device without SWNTs which has a power dependence of I-V5. The EL and the I-V data together with the PL suggest an electronic interaction between the SWNTs and the host polymeric material, PEDOT. Probably this electronic interaction originates from the hole trapping nature of SWNTs in a hole conducting polymer.
IT **126213-51-2**
(organic **light emitting** diodes fabricated with single wall carbon nanotubes dispersed in a hole conducting buffer of conducting polymer)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**
IT **126213-51-2** 192446-73-4
(organic **light emitting** diodes fabricated with single wall carbon nanotubes dispersed in a hole conducting buffer of conducting polymer)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

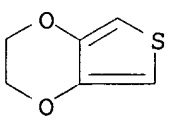
L67 ANSWER 47 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:601329 HCAPLUS
DOCUMENT NUMBER: 133:302658
TITLE: Chemical species at polymer/ITO interfaces: consequences for the band alignment in light-emitting devices
AUTHOR(S): Kugler, Thomas; Salaneck, William R.
CORPORATE SOURCE: ACRED AB, Norrkoping, S-60221, Swed.
SOURCE: Comptes Rendus de l'Academie des Sciences, Serie IV: Physique, Astrophysique (**2000**), 1(4), 409-423
CODEN: CRACFI
PUBLISHER: Editions Scientifiques et Medicales Elsevier
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review, with 40 refs. The influence of chemical species present at the interface between the electroluminescent polymer and the ITO electrode in light-emitting devices on the band edge energies of overlayers of semiconducting conjugated polymers was studied using photoelectron spectroscopy. The formation of InCl3 during the conversion of precursor-PPV on ITO was directly monitored with XPS. Ultrathin films of poly(bis-(2-dimethyloctylsilyl)-1,4-phenylenevinylene) were studied directly on ITO, as well as with an intermediate layer of an elec. conducting polymer using UPS. The initial work function of the ITO was varied chemical from 4.4 eV to 4.8 eV. In addition, the work function of ITO was changed in situ, within a given sample, by exposure to x-rays. For the polymer spin-coated directly on ITO, the vacuum levels are aligned. With the elec. conducting polymer blend, poly(3,4-ethylenedioxythiophene) doped with poly(4-styrene sulfonate) spin-coated on ITO, the Fermi levels are aligned, as expected. Therefore, with a conducting polymer blend intermediate layer between the polymer and the ITO, the polymer bands align to the vacuum level of the conducting polymer blend on ITO, and the barrier to hole injection into the polymer is determined by the work function of the conducting polymer blend instead of the work function of the ITO.

IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(chemical species at polymer/ITO interfaces with consequences for band alignment in **light-emitting** devices)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



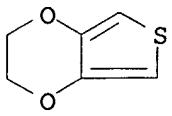
CC 73-0 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): **36**, 66
IT 50926-11-9, ITO **126213-51-2**, Poly(3,4-ethylenedioxythiophene) 220613-28-5
(chemical species at polymer/ITO interfaces with consequences for band alignment in **light-emitting** devices)
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 48 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:581479 HCAPLUS
DOCUMENT NUMBER: 133:315348
TITLE: Polarized electroluminescence from an anisotropic nematic network on a non-contact photoalignment layer
AUTHOR(S): Contoret, Adam E. A.; Farrar, Simon R.; Jackson, Peregrine O.; Khan, Sultan M.; May, Louise; O'Neill, Mary; Nicholls, J. Edward; Kelly, Stephen M.; Richards, Gary J.
CORPORATE SOURCE: Department of Physics, University of Hull, Hull, HU6 7RX, UK
SOURCE: Advanced Materials (Weinheim, Germany) (**2000**), 12(13), 971-974
CODEN: ADVMEW; ISSN: 0935-9648
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report polarized EL from a nematic network formed by photopolymn. of a liquid-crystalline monofluorene with diene photo-active end-groups for selective crosslinking. Macroscopic orientation of the chromophore is achieved with a photoalignment layer, doped to allow hole transport. The brightness and polarization ratio of EL depends on the composition and processing conditions of the alignment layer. The polymerization of luminescent reactive mesogens presents a viable route to polarized organic EL with the advantages of room-temperature processing and the ability to photopattern. Photoalignment provides a noncontact method to achieve macroscopic orientation of the chromophore without mech. damage. EL with a polarization ratio of 11:1 was obtained from a fluorene-based nematic network formed by the selective polymerization of diene photoactive end-groups. Surface alignment was achieved using a doped coumarin photoalignment layer, oriented by exposure to polarized UV light. Threshold voltages between 2 V and 8 V were found and a maximum brightness of 90 cd m-2 was obtained.
IT **126213-51-2**
(polarized **electroluminescence** from anisotropic nematic network on non-contact photoalignment layer)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 74, 76
IT 50851-57-5 **126213-51-2** 177856-56-3
(polarized **electroluminescence** from anisotropic nematic network on non-contact photoalignment layer)
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 49 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:548805 HCAPLUS
DOCUMENT NUMBER: 133:142495
TITLE: Electroluminescent material based on a polymer having a side chain comprising an anthracene core, method for its fabrication, and electroluminescent diode
INVENTOR(S): Bouche, Cecile Maria; Le Barny, Pierre; Facoetti, Hugues; Vergnolle, Marie
PATENT ASSIGNEE(S): Thomson CSF, Fr.
SOURCE: Fr. Demande, 36 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2785615	A1	20000512	FR 1998-14152	1998 1110

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PRIORITY APPLN. INFO.: FR 1998-14152 1998 1110

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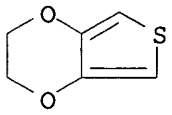
AB The invention concerns a new type of electroluminescent material for electroluminescent devices. The material consists of a lateral chain polymer containing groups derives from an anthracene core. These polymers were doped with smaller mols. which exhibit an absorption spectra overlapping at least partially with the polymer electroluminescence spectra in such a manner that the emission wavelength of the electroluminescent material can be varied. These polymers may be mixed with polymers showing injection properties for electrons or holes.
IT **126213-51-2**
(anode; **electroluminescent** material based on polymer having side chain comprising anthracene nucleus, method for fabrication, and **electroluminescent** diode)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA

INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM C09K011-06
ICS H05B003-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT 25233-30-1, Polyaniline 50926-11-9, ITO **126213-51-2**
(anode; **electroluminescent** material based on polymer having side chain comprising anthracene nucleus, method for fabrication, and **electroluminescent** diode)

L67 ANSWER 50 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:449162 HCAPLUS
DOCUMENT NUMBER: 133:214984
TITLE: Electroluminescence emission pattern of organic light-emitting diodes: Implications for device efficiency calculations
AUTHOR(S): Kim, Ji-Seon; Ho, Peter K. H.; Greenham, Neil C.; Friend, Richard H.
CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK
SOURCE: Journal of Applied Physics (**2000**), 88(2), 1073-1081
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The electroluminescence (EL) pattern emitted through the surface and edge of the glass substrate of two efficient polymer light-emitting diodes (LEDs) was characterized. The surface emission is nearly Lambertian, while the edge emission comprises discrete substrate reflection and leaky waveguide modes. A simple half-space optical model that accounts for optical interference effects of the metal cathode-reflector is developed to extract the location and orientation of the emitting dipoles from these patterns. Numerical simulations for a range of polymer and metal refractive indexes show that the surface out-coupling efficiency ξ of the internally generated photons can be greater than the 0.5 n-2 relation (n is the refractive index of the emitter layer) valid for isotropic emitters that are not subjected to optical interference effects. When the emitting dipoles are optimally located for maximum rate of surface emission, the model predicts ξ to vary as 0.75 n-2 for the isotropic case, and as 1.2 n-2 for the in-plane case. For the authors' LEDs, the EL arises from in-plane dipoles that are on average almost optimally located away from the cathode. Using this result, the internal EL quantum yield is .apprx.50% of the free-space photoluminescence yield of the emitter for the devices. This indicates excellent injection

balance and recombination efficiency of the charge carriers. By also taking into account of optical interference effects on the radiative rate, the lower limit for the probability of forming an emissive singlet exciton from elec. injection is 35%-45% in these conjugated polymers. This greatly exceeds the 25% probability from spin-degeneracy statistics.

IT **155090-83-8**
(**electroluminescence** emission pattern of organic **light-emitting** diodes: implications for device efficiency calcns.)

RN 155090-83-8 HCAPLUS

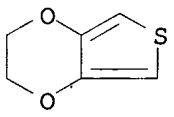
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

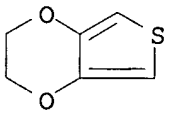
D1— SO_3H

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**
IT 26009-24-5D, Poly(p-phenylenevinylene), alkoxy derivs.
110866-77-8 **155090-83-8**
(**electroluminescence** emission pattern of organic **light-emitting** diodes: implications for device efficiency calcns.)
REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 51 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:425356 HCAPLUS
DOCUMENT NUMBER: 133:157349
TITLE: Heterogeneously integrated organic light-emitting diodes with complementary metal-oxide-silicon circuitry
AUTHOR(S): Mathine, D. L.; Woo, H. S.; He, W.; Kim, T. W.; Kippelen, B.; Peyghambarian, N.
CORPORATE SOURCE: Optical Sciences Center, University of Arizona, Tucson, AZ, 85721, USA
SOURCE: Applied Physics Letters (**2000**), 76(26), 3849-3851
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Top-emitting arrays of organic light-emitting diodes (OLEDs) were fabricated and demonstrated on complementary metal-oxide-Si (CMOS) circuitry. The 8+8 array of OLEDs is composed of 90 μm micropixels with a 55 μm separation The OLEDs are based on an emitting layer of tris-(8-hydroxyquinoline)aluminum (Alq3) doped with coumarin 6 to provide green light emission. A layer of N,N'-diphenyl-N, N'-bis(3-methylphenyl)1-1'-biphenyl 1-4, 4'-diamine (TPD) was used as a hole transport layer and poly(ethylenedioxythiophene) doped with polystyrenesulfonate was used as a buffer layer between the TPD and the CMOS anode metal. Bright light was emitted through a semitransparent Mg:Ag cathode when the micropixel was driven by an individual current source.
IT **126213-51-2**
(buffer layer; heterogeneously integrated organic **light-emitting** diodes with complementary metal-oxide-silicon circuitry)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S

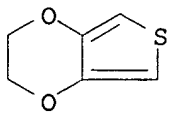


CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT **126213-51-2**
(buffer layer; heterogeneously integrated organic **light-emitting** diodes with complementary metal-oxide-silicon circuitry)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 52 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:377726 HCAPLUS
DOCUMENT NUMBER: 133:81307
TITLE: Effect of poly(3,4-ethylene dioxythiophene) on the built-in field in polymer light-emitting diodes probed by electroabsorption spectroscopy
AUTHOR(S): Brown, T. M.; Kim, J. S.; Friend, R. H.; Cacialli, F.; Daik, R.; Feast, W. J.
CORPORATE SOURCE: Cavendish Laboratory, University of Cambridge, Cambridge, CB3 0HE, UK
SOURCE: Synthetic Metals (**2000**), 111-112, 285-287
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Here the authors report electroabsorption (EA) measurements on light-emitting diodes (LEDs), fabricated with poly(4-4'-diphenylene diphenylvinylene) (PDPV) as the emissive layer in In-Sn oxide (ITO)/poly(3,4-ethylene dioxythiophene) (PEDOT):polystyrene sulfonic acid (PSS)/PDPV/Ca-Al and ITO/PDPV/Ca-Al structures. In the latter structure, the built-in potential, determined from nulling the EA signal, corresponds to the difference between the work functions of the electrodes. By incorporating a PEDOT:PSS film between the ITO electrode and the emissive layer such a built-in voltage increases by 0.5 V The correspondent lowering of the anodic barrier height at the PDPV interface probably is responsible for the improvement in device performance.
IT **126213-51-2**, Poly(3,4-ethylene dioxythiophene)
(effect of poly(ethylene dioxythiophene) on built-in field in polymer **light-emitting** diodes probed by electroabsorption spectroscopy)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT 50851-57-5, Polystyrene sulfonic acid 70221-26-0, Poly(4-4'-diphenylene diphenylvinylene) **126213-51-2**, Poly(3,4-ethylene dioxythiophene)
(effect of poly(ethylene dioxythiophene) on built-in field in polymer **light-emitting** diodes probed by electroabsorption spectroscopy)
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 53 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:377696 HCAPLUS
DOCUMENT NUMBER: 133:96257
TITLE: Blue light-emitting diodes from a meta-linked 2,3 substituted alkoxy poly(p-phenylenevinylene)
AUTHOR(S): Cacialli, F.; Chuah, B. S.; Friend, R. H.; Moratti, S. C.; Holmes, A. B.
CORPORATE SOURCE: Cavendish Laboratory, Cambridge University, Cambridge, CB3 0HE, UK
SOURCE: Synthetic Metals (**2000**), 111-112, 155-158
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report the fabrication of blue-emitting organic LEDs based on a soluble poly(p-phenylenevinylene) (PPV) copolymer, which takes advantage of both meta linkages and of an unusual substitution pattern (2,3) of the solubilizing alkoxy chains onto the aromatic ring, to blue-shift the radiative emission. The authors recorded turn-on fields of .apprx.1.1 MV/cm and efficiencies up to 0.032 cd/A in sandwich structures using Ca cathodes and a plasma-treated In Sn oxide (ITO) anode, coated with a poly(3,4-ethylene dioxythiophene) transport layer. The 1931 Commission Internationale de L'Eclairage (CIE) coordinates of the electroluminescence spectrum are (0.1881, 0.1812) without any filtering and (0.137, 0.0666), i.e., suitable for full color displays applications, after filtering away the emission extending beyond 510 nm.
IT **126213-51-2**, Poly(3,4-ethylene dioxythiophene)
(blue **light-emitting** diodes from a meta-linked 2,3 substituted alkoxy poly(p-phenylenevinylene))
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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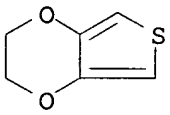

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**
IT 26009-24-5, Poly(p-phenylenevinylene) 50851-57-5
126213-51-2, Poly(3,4-ethylene dioxythiophene)
184431-56-9
(blue **light-emitting** diodes from a meta-linked 2,3 substituted alkoxy poly(p-phenylenevinylene))
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 54 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:214966 HCAPLUS
DOCUMENT NUMBER: 132:340876
TITLE: Control of color and efficiency of light-emitting diodes based on polyfluorenes blended with hole-transporting molecules
AUTHOR(S): Sainova, D.; Miteva, T.; Nothofer, H. G.; Scherf, U.; Glowacki, I.; Ulanski, J.; Fujikawa, H.; Neher, D.
CORPORATE SOURCE: Max-Planck-Institute for Polymer Research, Mainz, D-55021, Germany
SOURCE: Applied Physics Letters (**2000**), 76(14), 1810-1812
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Adding low-mol.-weight hole-transporting mols. (HTM) with different oxidation potentials to the polyfluorene emission layer of single-layer light-emitting diodes causes significant changes in the device properties. The pronounced increase in luminance efficiency combined with a decrease in current is attributed to significant hole trapping, as further suggested by thermoluminescence expts. Using a oligo-triphenylamine HTM with an ionization potential of .apprx.4.9 eV, light-emitting diodes with stable blue emission, a brightness of 800 cd/m2 and an efficiency of 0.87 cd/A were realized. Further, the red-emitting contribution to the spectra as observed in the pure polymer devices could be fully suppressed.
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(substrate covering layer; control of color and efficiency of **light-emitting** diodes based on polyfluorenes blended with hole-transporting mols.)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

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CRN 126213-50-1
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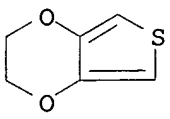

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(substrate covering layer; control of color and efficiency of **light-emitting** diodes based on polyfluorenes blended with hole-transporting mols.)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 55 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:130398 HCAPLUS
DOCUMENT NUMBER: 132:200844
TITLE: Analysis of the turn-off dynamics in polymer light-emitting diodes
AUTHOR(S): Pinner, D. J.; Friend, R. H.; Tessler, N.
CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK
SOURCE: Applied Physics Letters (**2000**), 76(9), 1137-1139
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors present exptl. techniques to analyze the electroluminescence (EL) of polymer light-emitting diodes following the removal of an applied voltage pulse. The authors explain the fast modulation of the EL intensity at turn-off in terms of the sudden reduction of the Langevin recombination rate, and extract the time evolution the device's internal elec. field at the recombination zone during the application of a voltage pulse. The results are compared to, and are consistent with, those of simple numerical modeling. The subsequent long-lived EL tail is analyzed to give the time evolution of the carrier distributions at the recombination zone once the voltage pulse was removed.
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(anal. of turn-off dynamics in polymer **light-emitting** diodes)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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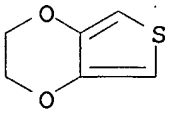
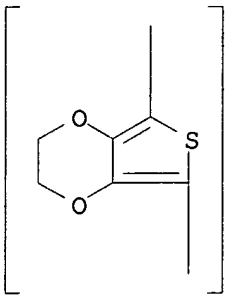


CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT 26009-24-5, p-Phenylene vinylene 50926-11-9, ITO
126213-51-2, Poly(3,4-ethylenedioxythiophene)
(anal. of turn-off dynamics in polymer **light-emitting** diodes)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 56 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:663913 HCAPLUS
DOCUMENT NUMBER: 132:28019
TITLE: Transient electroluminescence of polymer light emitting diodes using electrical pulses
AUTHOR(S): Pinner, D. J.; Friend, R. H.; Tessler, N.
CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK
SOURCE: Journal of Applied Physics (**1999**), 86(9), 5116-5130
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Detailed exptl. and theor. anal. of the pulsed excitation of polymer light emitting diodes is presented. The authors find a set of universal transient features for a variety of device configurations (different polymers/cathodes) which can be reproduced using the authors' phenomenol. numerical model. The temporal evolution of the electroluminescence in response to a step voltage pulse was characterized by: (i) a delay followed by; (ii) a fast initial rise at turn-on followed by; (iii) a slow rise (slower by at least one order of magnitude). The large mobility mismatch between holes and electrons in conjugated polymers allows the authors to sep. time resolve the motion of holes and electrons. The authors suggest a method for extracting mobility values that takes into account the possible field-induced broadening of carrier fronts, and which is compatible with mobilities determined from constant wave measurements. By using appropriate device configurations it is possible to determine the mobilities of both holes and electrons from a single device. Mobilities for holes and electrons are extracted for a poly(p-phenylenevinylene) copolymer and poly(di-octyl fluorene).
IT **163359-60-2**
(transient **electroluminescence** of polymer **light emitting** diodes using elec. pulses)
RN 163359-60-2 HCAPLUS
CN Poly(2,3-dihydrothieno[3,4-b]-1,4-dioxin-5,7-diyl) (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**
IT 9003-53-6 26009-24-5, Poly(p-phenylenevinylene)
163359-60-2 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl)
(transient **electroluminescence** of polymer **light emitting** diodes using elec. pulses)
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 57 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:237528 HCAPLUS
DOCUMENT NUMBER: 130:330382
TITLE: Stability and characterization of large area polymer light-emitting diodes over extended periods
AUTHOR(S): Gill, R. E.; Van de Weijer, P.; Liedenbaum, C. T. H.; Schoo, H. F. M.; Berntsen, A.; Vleggaar, J. J. M.; Visser, R. J.
CORPORATE SOURCE: Philips Research Laboratories, Eindhoven, 5656 AA, Neth.
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (**1998**), 3476(Organic Light-Emitting Materials and Devices II), 250-256
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To apply polymer light-emitting diodes in com. products a number of lifetime specifications have to be met. The authors report on the performance and stability of polymer light-emitting diodes based on dialkoxy-substituted fully conjugated PPV. Lifetime measurements were performed on small (5 mm2) and large (8 cm2) area devices under different conditions, including variations in temperature, luminescence intensity and humidity. Polymer LEDs can withstand extreme lifetime tests successfully. The results are compared with lifetime specifications for applications in consumer applications and are discussed in terms of the stability of the emissive polymer. Spectral measurements (IR, PL) as a function of the operational lifetime are presented.
IT **126213-51-2**
(stability and characterization of large area polymer

light-emitting diodes over extended periods)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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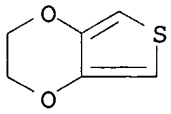

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl) **126213-51-2**
(stability and characterization of large area polymer **light-emitting** diodes over extended periods)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 58 OF 58 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:272117 HCAPLUS
DOCUMENT NUMBER: 127:10862
TITLE: Polymeric anodes for improved polymer light-emitting diode performance
AUTHOR(S): Carter, S. A.; Angelopoulos, M.; Karg, S.; Brock, P. J.; Scott, J. C.
CORPORATE SOURCE: Department of Physics, University of California, Santa Cruz, CA, 95064, USA
SOURCE: Applied Physics Letters (**1997**), 70(16), 2067-2069
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors have studied polyaniline and polyethylenedioxythiophene transparent electrodes for use as hole-injecting anodes in polymer light emitting diodes. The anodes were doped with a variety of polymer and monomer-based acids and cast from either H2O or organic solvents to determine the effect of the dopant and solvent on the hole-injection properties. The anodes with polymeric dopants have improved device quantum efficiency and brightness relative to those with small mol. dopants, independent of conductivity, solvent, or type of conducting polymer. For the most conducting polymer anodes [σ>2(Ω cm)-1], diodes could be made without an In Sn oxide underlayer. These diodes show substantially slower degradation
IT **126213-51-2**
(polymeric anodes for improved polymer **light-emitting** diode performance)
RN 126213-51-2 HCAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
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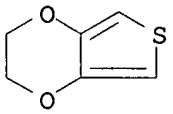

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **36**, 76
IT 872-50-4, uses 25233-30-1, Polyaniline **126213-51-2**
138184-36-8
(polymeric anodes for improved polymer **light-emitting** diode performance)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT